

# Owner's Manual

Volkswagen Karmann Ghia 1969



ENGINE #  
H5891093

CHASSIS #  
149863903

LICENSE #  
ZOX 821

Key #

Customer Identification card Imprint



## Customer Identification Card

This is another feature of Volkswagen Service that adds to your convenience. Just present this Manual whenever you stop for service at your Authorized Volkswagen Dealer. Your Identification Card will quickly furnish the Service Advisor with your name and address and all pertinent vehicle data.

# Volkswagen Owner's Manual

1969 Models

## Warranty Voucher

for the new VW automobile

Type \_\_\_\_\_

Chassis No. \_\_\_\_\_

Engine No. \_\_\_\_\_

In accordance with the terms of warranty printed overleaf.



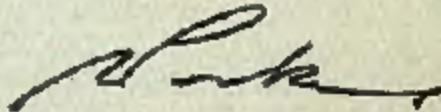
(Stamp of Selling  
VW Dealer)

The warranty commences at the date the VW automobile is delivered to the original purchaser.

viz. on \_\_\_\_\_  
(To be filled in by selling VW Dealer)

and covers a period of 24 months or the period before the vehicle has been driven 24,000 miles, whichever event shall first occur. Should any warranty claim arise, you are requested to submit this voucher to your VW Dealer.

VOLKSWAGEN OF AMERICA, INC.



No warranties, express or implied, as to Volkswagen vehicles sold in the United States are made either by Volkswagen of America, Inc. or by the manufacturer or by the selling dealer, except the following warranty by Volkswagen of America, Inc.

## Warranty for new Volkswagen vehicles

This warranty is issued by Volkswagen of America, Inc. ("VWoA"), the authorized United States importer of Volkswagen vehicles.

Free repair or replacement  
in United States and Canada  
of defective parts  
for 24 months or 24,000 miles

Maintenance and validation  
by owner required to keep  
warranty in effect

Items not covered by warranty

1. VWoA warrants that every Volkswagen vehicle imported by VWoA and sold as a new vehicle to a retail customer by an authorized United States Volkswagen dealer will be free from defects in material and workmanship under normal use and service for 24 months after the date of delivery of the vehicle to the original retail customer or until the vehicle has been driven 24,000 miles, whichever comes first. This warranty is limited, however, to the following: If any part of the vehicle becomes defective during this period, under normal use and service and the vehicle is brought to the workshop of any authorized Volkswagen dealer in the continental United States, Hawaii or Canada, the dealer will, without charge, either repair the defective part or replace it with a new or factory reconditioned part.

2. In order to keep this warranty in effect the owner must do two things:  
**FIRST:** The owner must have the vehicle maintained and serviced as prescribed in the Volkswagen Maintenance Schedule. (See page 86)  
**SECOND:** Every twelve months during the warranty period the owner must obtain from an authorized United States Volkswagen dealer a Validation Stamp on the Maintenance Card to show that the vehicle has been maintained and serviced in accordance with the Volkswagen Maintenance Schedule. Validation will be made upon presentation of bills or other evidence sufficient to satisfy the dealer that the required service and maintenance have been performed. The validated Maintenance Card must be submitted whenever a claim is made under this warranty.

3. VWoA's warranty does not cover:  
(i) Defects, damage or deterioration due to normal use, wear and tear or exposure; (ii) normal maintenance services, such as fuel system cleaning and wheel, brake or clutch adjustments; (iii) the replacement of service items, as, for instance, spark plugs, ignition points, V-belts, wiper blades or brake and clutch linings; (iv) deterioration of upholstery, soft trim and appearance items; (v) damage or defects due to misuse, alteration, negligence or accident; and (vi) damage or defects due to the repair of the vehicle by someone other than an authorized Volkswagen dealer or the installation of parts other than genuine Volkswagen parts.

**Warranty outside United States  
and Canada**

4. If the vehicle is brought to an authorized Volkswagen workshop outside the continental United States, Hawaii or Canada, VWoA's warranty will not be applicable, and defective parts will be repaired or replaced free-of-charge with new or factory reconditioned parts only within the terms and limitations of the warranty for new Volkswagen vehicles in effect in the country where such authorized Volkswagen workshop is located.

**No other warranties made**

5. This warranty is in lieu of all other express or implied warranties of VWoA, the manufacturer and the selling dealer, including any implied warranty of merchantability or fitness for any particular purpose. Neither VWoA nor the manufacturer assumes, or authorizes any person to assume, on its behalf, any other obligation or liability.

**Let us explain the warranty . . .**

Volkswagen of America, Inc. is proud of the quality of automobiles it imports. It warrants new vehicles for a period of 2 years or 24,000 miles from the date of purchase, whichever comes first. In general, but subject to certain exceptions stated in the warranty, the complete vehicle including battery and tires is covered under the provisions of the Volkswagen New Vehicle Warranty. It will be honored by any Authorized Volkswagen Dealer in all 50 States, the District of Columbia and Canada.

This warranty is transferable if the ownership of the vehicle changes within the above period.

In order to keep the warranty in force, you as the owner of the vehicle have certain responsibilities. It is important that the vehicle be maintained properly. To facilitate record keeping, this booklet provides on pages 58 to 61 space for listing maintenance services and oil changes as they are performed. We recommend that maintenance services are performed by Authorized Volkswagen Dealers. They offer with their factory-trained mechanics and special tools fast, efficient service in accordance with Volkswagen quality standards.

Validation is a requirement of the Volkswagen New Vehicle Warranty. One year after the date of delivery, the warranty must be validated for the second year. This can be done at any Authorized Volkswagen Dealership in the USA or Canada. For that purpose, you should present to the Authorized Volkswagen Dealer the maintenance record for your vehicle. Provided that maintenance services and oil changes were performed in accordance with Volkswagen specifications, dated bills of either than Authorized Volkswagen Dealers will be accepted as proof that these services were performed on time.

Not all repairs, adjustments and replacements, however, are the result of defects in material or workmanship. There are other circumstances beyond the control of the manufacturer that might make a workshop visit necessary. These depend mainly on where you drive and how you drive. They would include weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage.

For example, you are required to pay for the following:

**Maintenance services and oil changes**

**Wheel alignment and wheel balancing** — the frequency of such services depends on driving conditions such as rapid starts and stops, tire skidding, hitting pot holes and curbs, etc.

**Mechanical adjustments** — including brake, clutch, door locks are required as a matter of normal operation of a motor vehicle. This protects you against early or expensive replacements.

**Brake and clutch linings** — are directly affected by driving habits and use. The replacement of these linings and the reconditioning of brake drums should be performed whenever necessary.

**Spark plugs and ignition points** — are subject to wear. Periodic replacements ensure you of maximum engine performance and gasoline economy.

**Wiper blades** — life expectancy will vary widely depending on climate conditions and extent of use. You are the best judge to decide when they should be replaced.

**Light bulbs and fuses** — are service items.

**Paint, chrome, convertible top, trim and other appearance items** — are affected by normal wear and exposure. Proper care of these items can add to their appearance and durability. (Impairments are normally apparent during New Vehicle pre-delivery inspection. For your protection, please report any imperfection to your Dealer immediately after you notice it.)

**Tires and batteries** — are subject to wear. If there is a defect you pay only for the amount of use you have gotten. An adjustment for tires is based on the remaining tread depth, for batteries on time used based on 36 months of service. This is known as the pro-rata method of adjustment.

# Insert

for Instruction and Owner's Manual



1969 Models

Please note that your Karmann-Ghia is equipped with special seat belts. This is contrary to the information given on page 14 of the Instruction Manual and page 13 of the Owner's Manual.



Occupants of the vehicle should wear the belts at all times. Shoulder belts should not be worn by persons less than approximately 55 inches in height.

Each of the front seats is equipped with a combination lap/shoulder belt that is completely adjustable to fit different sized people and to allow for seat and backrest adjustment. When not in use, the belt should be hung on the hook behind the seats by means of the hole in the buckle. This prevents the belt from lying about and getting dirty and keeps the belt handy.

**Operation:** After sitting down and adjusting the seat and backrest positions, pull the belt buckle across in front of you to the center of the

car. A light push of the center of the buckle against the stirrup will make the buckle engage with a click. Be sure the belt is not twisted. Adjust lap and shoulder belt by pulling belts until they fit snugly across body. Take up any slack by moving the slide.

To lengthen either section of the belt, release buckle from stirrup, hold buckle at a right angle to belt and pull belts through buckle. No further adjustment should be necessary if the same person uses the seat belt each time.

To release the belts, grasp the buckle and pull upward.

This opening direction is shown by an arrow on the buckle.

**Do not strap in more than one person with each belt.**

**Cleaning:** To keep belts clean, wash belts with mild detergent without removing from vehicle. Dry belts in the shade until they are completely dry. Do not bleach or dye the belts or use any other material to clean the belts because some of these agents can weaken the webbing.

Check buckles and fittings periodically to make sure they function correctly and belts to ensure that the webbing has not been damaged.



## Dear VW Owner:

### Congratulations!

You have just purchased one of the finest automobiles that rigid quality controls and thorough inspections can produce. Yet for all its advanced engineering and in spite of all the precision skills that have gone into it - your VW is only as good as its driver. To help you enjoy all the good miles your VW was designed to give we recommend the following good driver procedures:

#### Before starting out:

- 1 - Observe tread depths of tires. Look for wear.
- 2 - Check that all windows are clean inside and out.
- 3 - Position seat properly for easy reach of controls.
- 4 - Adjust inside and outside mirrors for unobstructed side view.
- 5 - Check brake operation and brake warning light (ignition on).
- 6 - Check turn signal indicators both inside and out (ignition on).
- 7 - Fasten seat belts.

Once you get this checklist habit (Airliner Pilots use one all the time), you will wonder why everyone does not drive this way.

#### Once you are underway:

- 1 - Always drive defensively. Expect the unexpected.
- 2 - Use signals to indicate lane changes.
- 3 - Turn on headlights at dusk.
- 4 - Follow at a safe distance. A good rule of thumb is to allow a minimum of one car length for each 10 mph of speed.
- 5 - Reduce speed during night hours and inclement weather.
- 6 - Observe speed limits and obey highway signs.
- 7 - When overly tired, stop, get off the roadway and take a rest.
- 8 - Use emergency lights when stalled or stopped for repairs.

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**Volkswagenwerk AG  
certifies to the dealer that this  
vehicle conforms to all US federal  
motor vehicle safety standards  
applicable at time of manufacture.**

This sticker assures you that your 1969 Volkswagen complies with all US Motor Vehicle Safety Standards which were in effect at the time when the vehicle was produced.



The tires of your Volkswagen conform to the US Motor Vehicle Safety Standards. When purchasing replacement tires, make sure that they show the same specifications for tire size, load carrying capacity etc. This also applies to VW recommended alternate replacement tires.

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All pictures are of the Karmann Ghia Coupé with four speed synchromesh transmission and the text is based on this vehicle. Where the controls, equipment and technical data of the Automatic, Stick Shift and the Convertible differ considerably, attention is drawn to the difference.

Specifications are subject to alterations without notice.

## Getting acquainted

### It is advisable

to read this Owner's Manual carefully. You will then get to know your new car quickly and will be able to start off on your first trip with complete confidence.

As you will notice your Volkswagen has many features designed with your safety in mind.

The first part of this manual deals with the operation of your Volkswagen. Everything about winter driving, tips on care of the vehicle and numerous points on carrying out small repairs and adjustments are given in the second half. It further contains information on lubrication and maintenance, and some interesting technical data.

Additionally, this book contains the warranty voucher and the terms of warranty as well as a punchcard for the free-of-charge maintenance service and a maintenance schedule. An easy-to-use maintenance record provides a stamping field, so you can tell at a glance when a maintenance service is due. The stamps in the squares show that the oil changes and maintenance services have been carried out regularly.

### Only one key

is required to open the doors and start the engine. Be sure the key number is recorded in the front of this manual. If you should lose the key, you can obtain a replacement from your Authorized Volkswagen Dealer.



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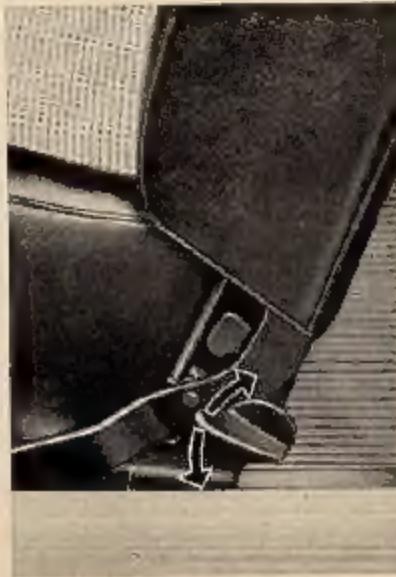
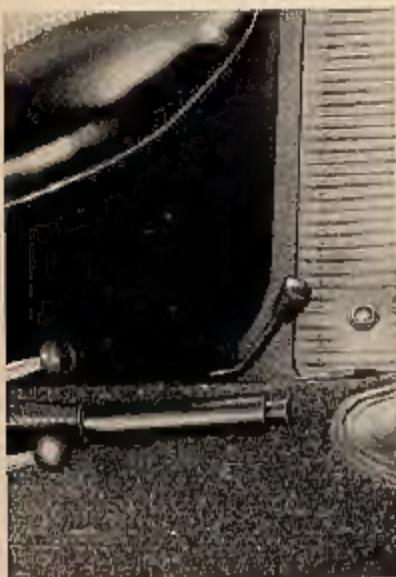
## Sit down and make yourself comfortable

When driving, you must be comfortable. That is why the Volkswagen has separate front seats which are built-in so that you can alter seat position and backrest angle to suit your requirements. This is quite simple — just lift the lever at the front righthand side of the seat and slide the seat forward or backward. After adjusting,

be sure the seat is securely locked in position. The runners are slightly inclined so that the seat is raised as it goes forward.

The backrest angle can also be set to various angles. Try them out until you find the angle which suits you best.

The backrests have safety catches that prevent them from lifting forward when the brakes are applied very hard. The catches can be released by pulling the knob in the side of the backrest up.

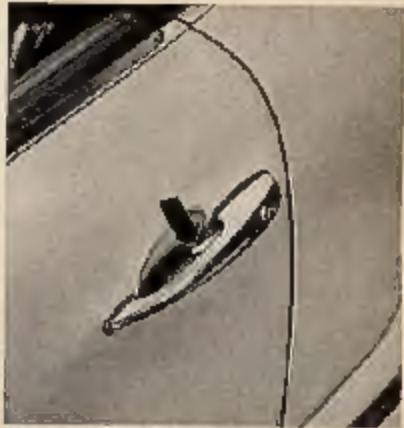
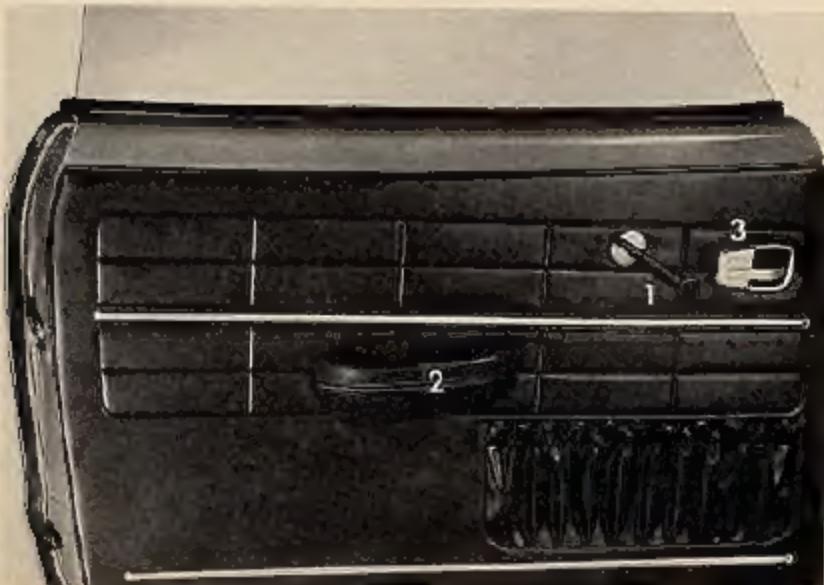


## The doors . . .

can be closed more easily if a window is opened slightly.

- 1 - Window crank
- 2 - Armrest and door closing grip
- 3 - Inside door handle with locking lever

The doors cannot be opened from inside or outside unless the locking levers are pulled out. When leaving the vehicle, just push in the locking lever and pull the trigger in the outer handle as you close the door. The vehicle is then locked.



If the door closes by itself after the locking lever has been pushed in, it will not lock because the locking lever will spring out automatically. This is an additional safety measure to prevent you from being locked out if the door should accidentally slam shut while the key is still inside the vehicle.

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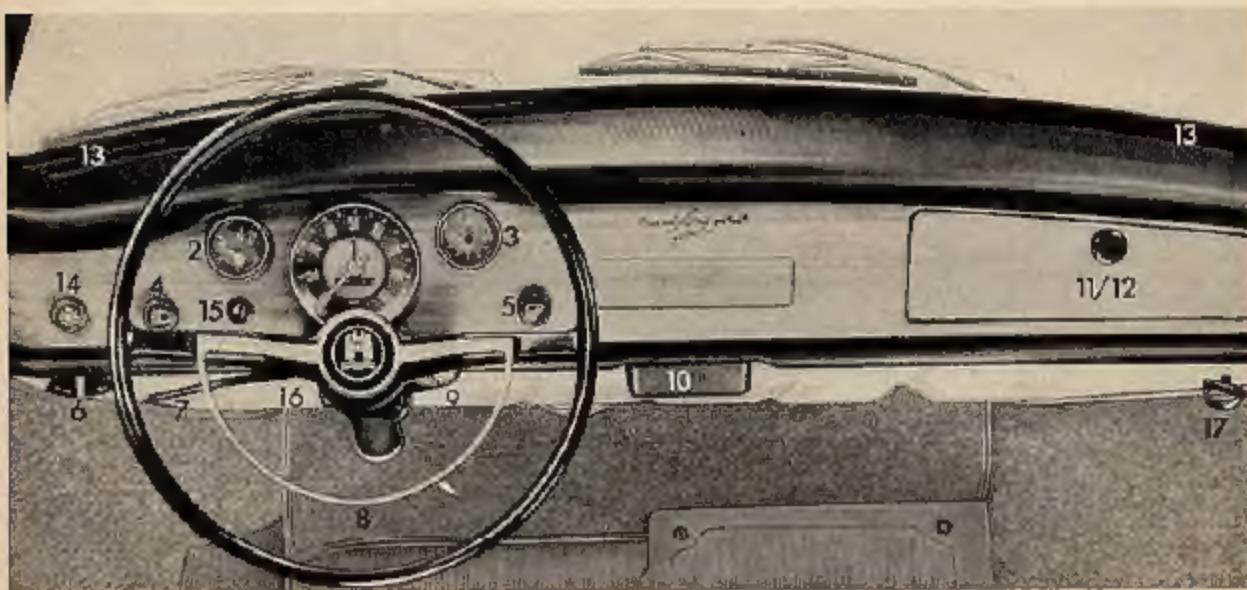
## In front of you - the instrument panel

Even if it is not your first Volkswagen, just have a quick look at the dash and try out the various knobs and levers with the ignition switched on!

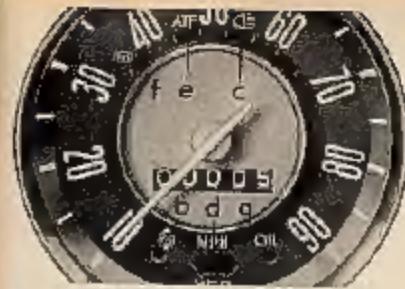
### 1 - Speedometer

The following warning lamps are in the speedometer dial:

- |                  |                                    |
|------------------|------------------------------------|
| a - red          | - oil pressure                     |
| b - red          | - generator and cooling            |
| c - blue         | - headlamp high beam               |
| d - green arrows | - turn signals                     |
| e - red          | - temporary Audiomatic Stick Shift |
| f - green        | - rear window defroster            |



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## 2 - Fuel gauge

When the needle is on the "1/2" mark, there is about 1 gallon of fuel left in the tank — time to refuel at the next opportunity.

## 3 - Clock

The clock is electrically operated. The hands can be set by pressing in and turning the knobs in the center of dial.

## 4 - Light switch

Pull the knob out to the first stop to switch on the parking, license plate, tail and instrument lights. Pulling the knob out to the next stop switches the headlamps on.

**The brightness of the instrument lights can be adjusted by turning the lighting switch knob.**

## 5 - Windshield wipers and windshield washer system

The two-speed wipers are controlled by turning the switch. They park automatically when switched off. The button in the switch knob controls the windshield washer.

## 6 - Fresh air ventilation

The two knobs on the lower edge of the in-

strument panel control the flow of fresh air separately for each side through the defroster vents — 13 — at the bottom of the windshield.  
Knobs to front — on  
Knobs to rear — off

By operating the heating and the fresh air ventilation at the same time you can admit a mixture of warm and fresh air into the vehicle.

## 7 - Turn signal and dimmer switch

Lever up — right turn signal

Lever down — left turn signal

The turn signals are cancelled automatically upon completion of a turn.

Pull the lever toward steering wheel to release or lower headlight beams. A blue warning light in the speedometer dial shows when the headlamp high beams are switched on.

## 8 - Horn ring

## 9 - Steering / ignition lock

1 - Ignition off — Steering locked

2 - Ignition off — Steering free

3 - Ignition on — 4 - To start

### Hint:

Should it be difficult to turn the key after inserting, gently move the steering wheel from side to side until key turns freely.



### Important!

Remove key from lock only when vehicle is stationary.

## 10 - Ashtray

To remove ashtray, press foot spring down and pull ashtray out.

## 11 - Glove compartment

To open turn knob to the left.

Inside the glove compartment is the release lever — 12 — for the front hood.

In the Convertible the knob of the glove compartment lid can be locked. This prevents access to luggage and spare wheel by unauthorized persons while the top is down.

## 12 - Release lever for front hood

To close the front hood, just press it down firmly until you hear it click.

## 13 - Defroster vents

On the Coupe, another defroster vent is located at the lower edge of the rear window.

## 14 - Emergency flasher switch

If the vehicle is disabled or parked under emergency conditions, pull the switch to make all four turn signals flash at once. A warning light in the switch knob flashes when the system is turned on.

## 15 - Warning light for dual circuit brakes

See explanation page 17

## 16 - Switch for rear window defogger

This rear window defogger is actuated by this switch after switching on the ignition. The green control lamp in the speedometer will light up when the system is in operation. After the rear window has been cleared, switch off the rear window defogger so as not to place an unnecessary drain on the battery.

## 17 - Release for fuel tank flap

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## Above the windshield

### 1 - Sun visors

You can lift the visors out of the center mounting and swing them toward the door windows to prevent glare from the sides.

### 2 - Rear view mirrors

Outside and inside mirrors are adjustable so that they can be set to give clear vision to the rear at all times. The outside mirror is hinged to fold flat upon contacting anything.

The inside rear view mirror is rimmed with plastic for safety and designed to detach upon impact. It is equipped with an anti-glare provision and can be adjusted at the lower portion of the mirror.

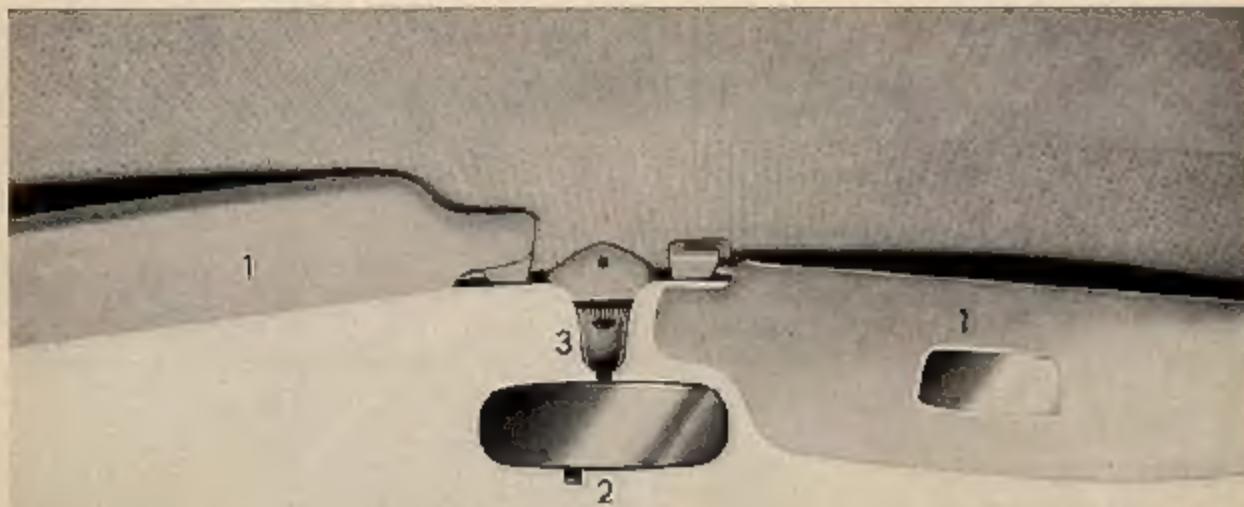
### 3 - Interior light

Switch positions:

Right — Interior light on

Center — Interior light off

Left — Light only on when doors are open



## In the footwell and between front seats

### 1 - Clutch pedal

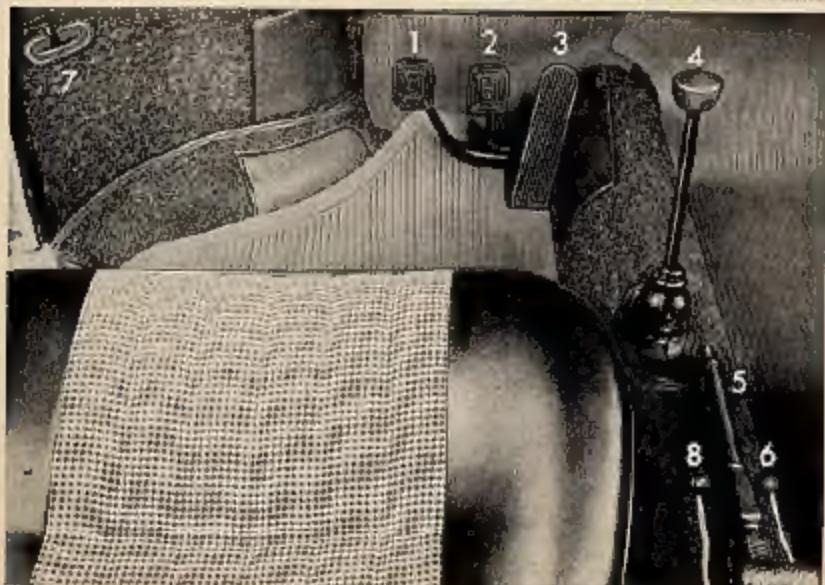
(Four speed synchromesh transmission only)

### 2 - Brake pedal

Vehicles with four speed synchromesh transmission.

### 2a - Brake pedal

Vehicles with Automatic Stick Shift.



### 3 - Accelerator pedal

### 4 - Gearshift lever

Detailed instructions on Automatic Stick Shift are given on page 21.

### 5 - Hand brake

To release the hand brake, pull the lever up slightly first and press the locking knob.

### 6 - Heating control lever

Lever up - heat on

Lever down - heat off

The heating will be more effective if you open one of the rear windows slightly because the fan can then force the warm air into the body interior more easily.

### 7 - Control lever for heating in Front footwell

The flow of warm air into the front footwell can be controlled separately on each side.

Pull lever forward - heat on

Pull lever backward - heat off

### 8 - Control lever for heating in rear footwell

This lever controls the flow of warm air into the rear footwell when the heating is on.

Lever up - heat on

Lever down - heat off

At low temperatures it is advisable to leave the rear outlets closed when first moving off. This increases the flow of air to the windshield to prevent steaming up when humidity is high. As soon as the windshield is clear, the rear footwell outlets should be opened so that the interior of the body heats up as quickly and uniformly as possible.

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## Behind you

### 1 - Rear luggage compartment

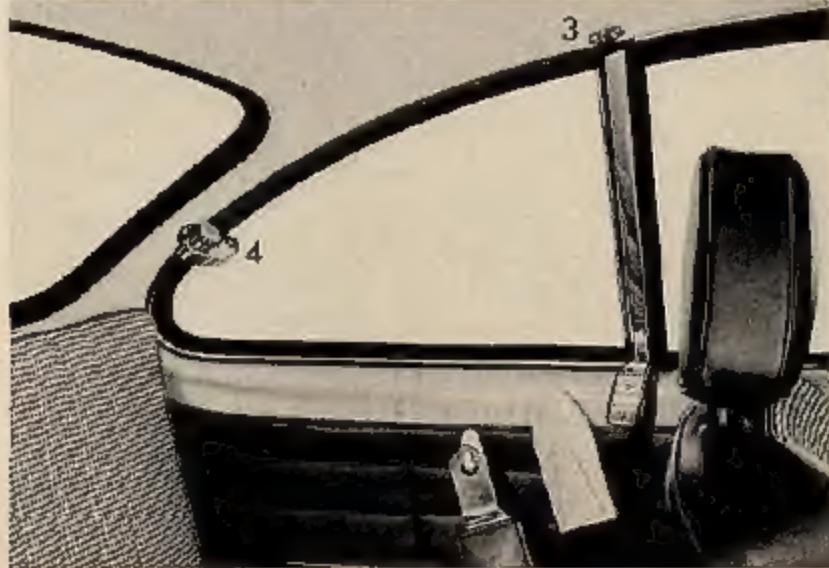
There is a second luggage compartment behind the jump seat. To stow luggage, just fold the backrest forward. You can leave the backrest in this position if you are in need of additional luggage space. In the normal upright position the backrest is secured to the parcel shelf by a plastic retaining plate.



### 2 - Knob for engine compartment

The lid for the engine compartment is unlocked with the knob near the left door lock pillar. The lid is held in the open position by springs. To close the lid, press down on the license plate lamp housing until you hear a click.

### 3 - Coat hooks



### 4 - Hinged quarter window

The windows can be opened as required after releasing the fastener. We recommend that you make full use of these windows, particularly under unfavorable weather conditions. They assure ventilation of the vehicle interior and, therefore, prevent the windows from fogging.

## Seat Belts

Each of the front seats in your Volkswagen-Karmann Ghia is equipped with a seat belt. Occupants of the vehicle should wear the belts at all times. Shoulder belt: never pull the strap if weight less than approximately 45 pounds is applied. Each of the front seats is equipped with a combination lap/shoulder belt that is completely adjustable to fit different sized people and to allow for seat and backrest adjustment.



When you use the lap section of the belt, retract and the belt should be hung on the hook behind the door by means of the hole in the buckle tongue. This prevents the belt from being pulled and getting dirty and keeps the belt handy.

**Operation:** After sitting down and adjusting the seat and backrest position, pull the belt buckle across the front of you to the center of



the car, insert the buckle tongue into the opening in the housing on the center panel and press it in tightly. A click will be heard when the buckle locks. Be sure the belt is not twisted. Pull lap belt through buckle until belt is completely unrolled from retractor and belt fits snugly across lap. Take up any slack by moving side. Always shoulder belt by pulling belt until it fits snugly across chest. Take up any slack by moving side. To lengthen section of the belt release buckle from housing, hold buckle at a right angle to belt and pull belt through buckle. No further adjustment should be necessary if the same person uses the seat belt each time.

To release the belt pull the unclipping lever on the belt housing upward. Daily a light pull and a slight movement of the lever is necessary.

**Do not strap in more than one person with each belt.**

**Cleaning:** Keep belts clean. Wash belts with mild detergent without removing from vehicle. Dry belts in the shade and do not blow hot belts to dry out completely. Do not stretch or dry in sun or use any other method to clean the belts because some of these agents can weaken the webbing.

Check buckles, retractors and straps periodically to make sure they function properly and to ensure that the webbing has not been damaged.

**Now let us have a look...**

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## ... in the front luggage compartment

Whether you are taking a lot of luggage with you or not, load the front luggage compartment first, using the heaviest pieces of luggage if possible. The correct distribution of load means the best load holding as take advantage of the possibilities offered by the Volkswagen with its two luggage compartments.



### 1 - Spare wheel

It also serves as an air supply for the windshield washer container; therefore, the spare tire pressure should occasionally be checked and inflated to 4.8 psi. The air flow from the spare tire to the washer container will be

interrupted if the tire pressure ever falls below 2.0 psi. This is done automatically by means of the filler cap valve. As a result, the spare tire will always have the required pressure should it be needed.



The front hood is opened by pulling out the lever on the left in the glove compartment. The hood springs up slightly, not under spring pressure and can be opened fully when the safety hook near the lock has been pressed up.

To close the hood, press it down firmly until you hear a click. Never try to close the hood by pressing at the side; always press it in the center near the lock.

## 2 - Container for windshield washer

As soon as the filler cap of the container is opened, the air supply from the spare tire to the windshield washer container is interrupted by means of a valve in the filler cap. The washer container can be filled completely with washer fluid. It is advisable to add a cleaning solution, such as Volkswagen's Windshield Washer Anti-Frosted and Solvent to the water or clear water alone is usually not adequate to ensure that the windshield is cleaned quickly and properly. Through this cleaning agent is put in, it also acts as a mild anti-freeze solution in the winter.

Follow the directions on the container for the amount to be used.

After filling container ensure that the filler cap is always screwed on tightly.

## 3 - Jack

Operation of the jack is described, together with wheel changing, on page 30.

## 4 - Tools

In the tool bag you will find:

- 1 V belt of the size 9.5 x 900
- hub cap remover
- 1 pair of combination pliers
- 1 screwdriver with reversible blade (e.g. slotted and Phillips screws)
- 1 open- and wrench 8 mm and 13 mm
- 1 socket wrench for spark plug, van Allen and wheel bolts
- 1 socket wrench 13 mm
- 1 bar for socket wrench (also used to operate the jack)

## 5 - Brake fluid reservoir

The brake fluid level should always be above the protecting edge near the top of the container. If the brake fluid level ever falls below this edge the complete brake system should be thoroughly examined by your Authorized VW Dealer.

**Brake Fluid** is water absorbent and should, therefore, be renewed every 2 years by an Authorized VW Dealer.

## Now you know your vehicle fairly well.

Further hints on what to do before moving off and when on the move are given on pages 17 to 22. If you own a Convertible, read the next page first.

## When the sun is shining . . .

You can open the Convertible top without effort, but only open it when it is dry and clean because sharp particles of dirt will damage the material.



**Opening the Convertible top**

Always open the rear window first (A) and lower it until it rests on the rubber header properly. Remove pieces of luggage that may hinder the way. Release the locking levers for the top above the windshield and disengage the hooks from the brackets on the windshield frame (B). Fold the top back ensuring all the headlining folds inward and the top and padding fold outward between the bows (C). Press the top down until the catches engage (D).



Lower the locking levers onto the top, then lay the protective cover over the top. Attach the protective cover at all the back by the press buttons on the vehicle body, then pull the cover toward the front over the top. Secure the protective cover with the other four neck buttons near the doors and hook the two eyes in the cover over the projections on the jump seat backrest supports (E).

## Closing the Convertible top

Take the protective cover off. Press the top down so that the catches can be unhooked. Pull the top forward as far as the windshield and lower the locking levers. From inside the car, pull the top down to the windshield frame with one hand and with the other hand guide the hooks into the holes of the brackets on the windshield frame. After the hooks have been engaged tension the top by springing the locking levers. Finally close and lock the rear window.

## Before moving off, check . . .

the fuel, the brakes, the lights and, at regular intervals, the oil level in the engine and the tire inflation pressures



### The fuel

In the tank when full is sufficient for 280–285 miles. The filler neck is located behind a flap above the right front fender. The flap opens if you pull the release on the right hand side underneath the instrument panel.

The choice of fuel is left entirely to you. The Volkswagen will run satisfactorily on all gasoline which fulfill the octane requirements of the engine (91 octane).

If regular fuels with adequate anti-knock qualities are not available, premium fuel should be used or mixed with regular fuel.

### The brakes

should be checked before driving off. Your Volkswagen is equipped with a dual brake system. Each system, front and rear, can function independently.

### An indicator lamp on the instrument panel

monitors the brake system. Should the indicator lamp light up while applying the brakes see your Authorized VW Dealer as soon as possible because one of the two brake systems may have failed. The brakes will still operate however, a longer distance is required to bring the vehicle to a halt.

Push indicator lamp after switching the ignition on. If the lamp does not light up, the bulb should be replaced.

Please bear in mind that brakes are subject to wear. An increase in pedal travel will indicate this wear. Depending on individual operating conditions, the brakes may have to be adjusted between specified maintenance intervals.

17

The lights include headlights, back-up lights, all lights, license plate lights, turn signals and brake lights. The turn signals, brake lights and back-up lamps must be checked while the ignition is on.

If a turn signal is defective the warning lamp on the speedometer dial flashes much faster than usual or goes out. The brake lights only work when the brake pedal is depressed; the back-up lights only when reverse gear is engaged.

The oil level should be between the two marks on the dipstick and must never be below the lower mark. Wipe the dipstick clean before checking.

The vehicle must be on a level surface when the oil level is checked so the dipstick reading will be accurate. Do not check the oil immediately after stopping the vehicle. Wait at least 5 minutes to give the oil in the engine

time to drain down into the bottom of the crankcase.

To top up the oil, a well known brand should be selected. Although it is advisable to stick to one brand of oil, using a different brand to replenish the oil will not harm the engine. Details about the proper oil viscosities are given on page 42.

The correct tire pressure is most important in the interest of safety. Too low as well as too high a tire pressure reduces the life expectancy of the tires and furthermore, adversely affects the road holding of the vehicle. Although the tubeless tires of your car will hold the inflated tire pressure for a long time, you should check the pressure before you start out on a long trip or at least once a week.

The specified tire pressure can be found in the table on page 46 and also on the label inside the glove compartment lid.

### Two more important points

- 1 - If the vehicle is used mainly in very dusty conditions, the oil bath air cleaner must be checked frequently, even daily if necessary. How this is done is described on page 46.
- 2 - Do not drive your car with a disconnected battery. This may lead to damage to the electronic components of the electrical equipment.



## Starting the engine



Before turning the ignition key, make sure that the gear shift lever is in Neutral. Vehicles with Automatic Stick Shift can be started in Neutral only.

At temperatures above freezing point or when the engine is still warm, depress the accelerator pedal slowly while operating the starter. When the engine is very warm, depress pedal fully but do not "pump" it.

At temperatures below freezing point or when engine is cold, depress the accelerator pedal fully once and then release it so that the automatic choke can work. Then switch ignition on and start immediately. When the weather is very cold, the engine may turn over slowly during starting. In this case depress the clutch while cranking. If it turns over faster, hold the clutch down until the engine starts. When starting without depressing the clutch, be sure the handbrake is on and the gears left in Neutral.

As soon as the engine starts, release ignition key so that the starter is switched off. Do not try to warm the engine up by letting it idle with the vehicle stationary — drive off immediately.

Do not race the engine while it is still cold.

If the engine does not start the first time or stalls when decelerating, the ignition will have to be switched off and then on again because there is a non-repeat lock in the switch which prevents the starter from being operated when the engine is running and thus being damaged.

The warning lights in the speedometer will come on when the ignition is switched on. As soon as the engine starts, these lights will go out. Stop at once if one of these lights comes on when driving.

**Red warning light for generator and cooling**

Check the belt that drives the generator. If this belt breaks, the engine cooling fan also stops working. The proper way to fit a new belt is described on page 31.

If the generator stops charging for any other reason, you can drive on but try to get the vehicle to an Authorized Volkswagen Dealer as soon as possible because the battery will soon run down.

**Red warning light for oil pressure**

If this warning light comes on when driving the flow of lubrication oil to the engine may be interrupted. Check the oil level first. Should the cause of the trouble be elsewhere, contact your nearest Authorized Volkswagen Dealer.

**Be careful when running the engine in confined spaces.** Ensure that there is ample ventilation so that the poisonous exhaust gases can escape.

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## ...it runs...and runs...and runs...

You can drive your Volkswagen at full speed from the first day. There are however certain permissible speeds, angles or the various gears

|          |               |
|----------|---------------|
| 1st gear | 0-15 mph      |
| 2nd gear | 10-35 mph     |
| 3rd gear | 20-65 mph     |
| 4th gear | 30 mph and up |

When a particular traffic situation makes it essential to move rapidly you can accelerate up to 37 mph in 2nd gear and up to 54 mph in 3rd gear for brief periods only. Bear in mind,

however, that full throttle acceleration raises fuel consumption considerably. It is more economical to drive smoothly and keep the top speed fairly constant. Very fast, race-sporty driving, alternating between full throttle and hard braking will mean more frequent visits to a gas station and increased tire and brake lining wear.

You can drive very economically between

|                           |
|---------------------------|
| 10 and 20 mph in 2nd gear |
| 20 and 35 mph in 3rd gear |
| 30 and 60 mph in 4th gear |

Just a few words about the clutch while we are on the subject of driving. The clutch is a very hard worked part of the vehicle. A good driver slips the clutch as little as possible when taking off and changing gears. He always depresses the clutch fully when shifting, changes down into the appropriate gear in city traffic instead of slipping the clutch, and never uses the clutch pedal as a "rest" for his foot.

Shift into reverse gear only when the vehicle is standing still. Reverse gear is fitted with a lock so that it cannot be engaged unintentionally. To engage reverse, press the lever down, move it over to the left and pull it back to the stop.

Volkswagen automobiles have excellent brakes which can stop the vehicle in the shortest possible distance. But do not forget that the

braking distance increases very rapidly as the speed increases. At 80 mph for example, it is four times longer than at 30 mph. Apply the brakes in good time whenever possible, but do not use too much force — locked wheels increase the braking distance.

The friction value of the brake pads can be reduced if water reaches the brake discs during heavy rains for instance. Although the discs dry immediately, a lag in braking action may be noticeable after applying the brakes. Reduced friction of the tires during rain adds to this condition.

Therefore take care when driving and maintain a safe distance behind the preceding vehicle particularly when speeds are high and slippery.

Always set the handbrake after parking your car on steep hills with the front wheels toward the curb.

That just about covers the operating of the car and how to drive it properly. From page 23 on you find the tips for winter driving, breakdowns and all there is worth knowing about the vibration and maintenance of the vehicle.

Before driving a vehicle with Automatic Stick Shift be sure to read the following pages.



# VW Automatic Stick Shift

## At first glance

You will notice the lack of a clutch pedal. Driving with the Automatic Stick Shift is simpler and shifting easier. We suggest you carefully read the following instructions to familiarize yourself with the operation of the transmission.

## The Automatic Stick Shift

The transmission consists of a torque converter, a power-operated clutch for shifting, and a mechanical three speed transmission. The torque converter multiplies the torque produced by the engine and allows the vehicle to be driven with very little shifting. Normally, only two driving ranges will be used. It automatically changes the torque from the engine in an infinitely variable ratio according to driving conditions. Since the torque converter is a solid coupling, it also permits the vehicle to be stopped while the engine is running. The clutch interrupts the flow of power from the engine to point the gears in the transmission to be shifted. Because the power-operated clutch is actuated by the slight movement of the gearshift lever, there is no need for a clutch pedal.

## Driving ranges

Your Automatic Stick Shift has two forward driving ranges and one reverse. They have been designed so that you will very quickly know which range to use to produce the best performance under all driving conditions.

## Neutral

In between all gears in the H pattern. Neutral

is the only range that completely interrupts the flow of power to the rear wheels. It should be used when the car is standing at idle for any length of time with the hand brake set. Neutral is also the only range in which the engine may be started.

## Starting

With the hand brake set, move the shift lever to Neutral and start the engine. Move the shift lever into the range you wish to use normally Range 1, and then release the hand brake. It is important to release the brake after shifting because under certain conditions, the vehicle may creep when a driving range is selected. After shifting, be sure to remove your hand from the gearshift lever to allow the clutch to engage.

## Low Range

In the load range is not normally used in day to day driving. It is only used to get the car moving on steep slopes with a full load or when descending a very steep hill to take advantage of the additional engine braking. Low is also recommended for particularly slow driving over rough ground. Speeds from 0-35 mph can be obtained in this range.

## Driving Range 1

Is for starting off and accelerating. And elevates the speed range from 0-55 mph. Under normal driving conditions, the vehicle is started in this range before shifting to Range 2. Range 1 is also recommended for use in city traffic flow, moving lines of vehicles and whenever maximum acceleration is required for passing.

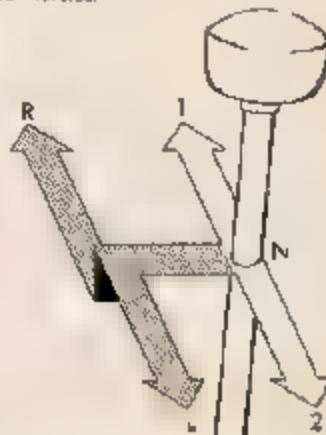
If the vehicle is in Range 2, you may downshift into Range 1 at any speed under 55 mph.

## Driving Range 2

Is the range that should normally be used for highway driving. While this range may be used at any speed from 0- top speed, it is the only range that can be used above 55 mph. At low speeds, however, it is better to use Range 1 to take advantage of its better acceleration.

## The Reverse Range

Should only be engaged when the vehicle is standing still. The gearshift lever must be depressed to get past the safety stop to shift into Reverse.



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## Shifting

is easy. Simply release the accelerator pedal and move the gearshift lever from the range you are in to the range you want, remove your hand from the gearshift lever, and again step on the accelerator.

## If you like quiet, smooth driving.

which saves fuel, we recommend that you shift to Range 2 soon after starting off at about 20 to 25 mph.

## If you want to drive fast.

And want maximum acceleration, you can stay in Range 1 right up to 55 mph and then shift into Range 2. Naturally, the will use more fuel.

## Driving downhill

you make full use of the braking power of the engine, just select a lower driving range as with a conventional transmission. When parking in tight spaces it is advisable to use the driving ranges Reverse and Low Shift into Reversed only when the vehicle is stopped.

## Warning light in speedometer

There is a red warning light in the upper half of the speedometer dial (see page 9). If the light ever goes on, it indicates that the ATF (Automatic Transmission Fluid) has reached too high a temperature. You drive for a long time under heavy load conditions, such as when pulling a trailer up a hill, and the warning

light goes on shift to a lower driving range. However, if the car is loaded so heavily that it barely moves or does not move at all, shift to a lower gear immediately without waiting for the warning light to go on.

## Stopping

Release the accelerator and apply the foot brake. If you are going to start off again in another range, you may shift into the new range while the vehicle is standing still, but if you remain in a driving range, apply the foot or hand brake to prevent the vehicle from creeping.

## Towing

is possible to tow a trailer with the Automatic Stick Shift. However, it is better to start in the Low driving range with this extra load. When climbing or descending steep hills, shift to a low range early.

## Push starting

If the engine should ever fail to start, the Low driving range should be used in such instances and the vehicle moved at a minimum speed of 15 mph. For further hints about towing and pushing see page 38.

## Some basic rules

1. When parking, apply the hand brake.
2. When driving, for an extended period of time, sit in Neutral and apply the hand brake. When stopped in traffic, apply either the hand or foot brake to prevent creep.

## When it snows and freezes

Your car has two features which you will appreciate in the winter. Air cooling and heating. You can leave your car out in the bitter cold without fear; the precooled engine will always start readily and supply warm air for the interior of the body.

Do not under any circumstances try to improve the heating of the vehicle by covering up the slots in the engine compartment lid. These slots must always be clear so that air can flow into the carburetor and to the engine cooling fan.

Tires with badly worn treads are very dangerous, particularly in the winter, so ensure that they are replaced in time.

M+S (Mud + Snow) tires with special heavy treads give good traction in snow and slush. They can be fitted to all four wheels but never use them on the front wheels only.

Better still are M+S tires with studs which increase the safety margin even on hard snow and ice. These tires should always be fitted on all four wheels. Check your state laws before using studded tires.

The specific characteristics of winter tires can be improved by raising the tire pressure to 3 psi above the normal operating pressure for the tire concerned. This inflation pressure then covers the recommended pressure increase of 3 psi for fast highway driving. M+S tires with studs should be run at moderate speeds when new in order to give the studs time to settle.

Normal winter tires only have one advantage when conditions on the road are really wintry.

M+S tires do not fulfill their purpose if the tread depth is less than 5/32" (4 mm).

Radial-ply tires are suitable all year round. If winter conditions are not too severe, they may very well replace conventional snow tires.

Even more suitable for operation of the vehicle during the winter season are radial-ply M+S and tires with studs. An increased tire pressure of 3 psi (0.2 kg/cm<sup>2</sup>) applies to these tires also.

For safety reasons, it is not advisable to drive a vehicle fitted with any type of winter tire at top speed. You cannot expect a winter tire to have the same degree of adhesion on dry, wet or snow-free roads as a normal tire. Furthermore, under these conditions M+S tires wear rapidly particularly at high speeds.

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Snow chains can be fitted to the rear wheels only. Only thin chains which do not stand clear of the tire bead and inner side wall more than ½ inch including tensioner, are suitable. When driving over long stretches of road which are free of snow, the chains should be removed because they serve no useful purpose and merely damage the tires and wear out quickly.

Engine oil of SAE 30 grade will tend to thicken at temperatures around freezing point and may cause difficult starting. As soon as winter temperatures are expected, change to a thinner grade of engine oil. Details of the various oils to be used are given on page 42.

If you drive mostly short distances and in city traffic, especially in the winter, we recommend that you have the engine oil changed at shorter intervals, say every 1500 miles. At other times these additional changes are unnecessary and uneconomical.

In countries with arctic climates and temperatures below about -15° F., the engine oil should be changed every 750 miles.

Transmission oil of SAE 10 grade can generally be used all year round. Only in countries with arctic climates is it necessary to use thinner SAE 80 transmission oil.

When the temperature is below -15° F. or long periods, it is advisable to use Automatic Transmission Fluid (ATF) in the transmission and final drive also. The vehicle must only be run with this fluid during the cold period. As soon as the temperature rises to near freezing point, this fluid must be replaced by SAE 80 or SAE 80 transmission oil.

The battery not only tends to drop in capacity as the temperature drops, it also has to work much harder in the cold weather. Current consumption is higher when starting and the lights are on longer. A really cold battery which may not be fully charged has only a fraction

of the capacity that a battery at normal temperature has, and this is fatal when trying to start a cold engine. If the car is only driven short distances and in city traffic, the battery may have to be charged from an external source from time to time. For more details see page 37.

The spark plugs should not have excessively large gaps especially in the winter. The gap is normally .028 in. but when the weather is very cold, the gap can be temporarily reduced to .020 in. to facilitate starting.

Door locks can freeze in winter. If water gets into the lock when washing the vehicle, do not aim the water jet directly at the locks. It is a good idea to cover the keyholes before-hand. A frozen lock can be opened by warming the key well before inserting it. An anti-freeze solution or glycerine should then be applied into the lock cylinder as soon as possible.

It is a good idea to carry a shovel or a snow-bladed spade in the car to clear away snow if you get stuck. A small hand brush for sweeping snow off the vehicle and a plastic scraper for the windshield are also useful.

## A clean, smart car looks better

We have provided your vehicle with paintwork which is not only extremely durable and has a very high gloss, but which also has a long service life. This has been achieved by special chemical treatment of the body metal and the use of a synthetic resin enamel paint technique.

But even the finest paint requires a certain amount of care. This is easy to appreciate if you consider for a moment the influences to which the paint is exposed. Sunlight, rain, industrial fumes, road dirt and dust are constantly at work attacking the paintwork.

In the winter all parts of the vehicle are subjected to ever more severe climatic conditions and the effect of corrosive salt solutions. It is advisable to clean and wax the vehicle more frequently in this period.

Every Authorized VW Dealer has stocks of car cleaning materials. These materials have been tested by us and found to give the best results. The order numbers of those materials are given on page 27.

**Never wash, wax or polish the car in the sun!**

**Before waxing and polishing, the vehicle must be washed and dried thoroughly**

Wash a newly painted vehicle frequently with clear water particularly in the first two or three months as this will help to harden the paint work. Use a soft sponge or cloth when for the body, a long handled brush for the wheels and plenty of water. Spray the body panels

and wheels with a fine soft spray first to loosen the dirt, then start at the top and wash downwards. Rinse the sponge out frequently to avoid scratching the paint.

Later on, the vehicle should always be washed when it is dirty. The longer the dirt is left on the paint the greater is the risk of it damaging the glossy finish. The dirt particles can leave a chemical effect on the paint surface or they can cause scratches if rubbed into the paint. If the dirt cannot be removed with clear water a suitable shampoo can be added to the water. Afterward, rinse all traces of the shampoo off with clear water and then use a chamois to dry the vehicle to avoid water spots.

Waxing should be carried out for the first time after about 8 to 10 weeks. Waxing is a means of putting back into the paint certain substances which keep it flexible and are lost in the course of time due to weathering and washing particularly when you use a detergent. The wax coating seals the pores of the paint and makes it water repellent.

The paint should be re-waxed when water remains in large patches on the surface and does not form beads and roll off. Regular waxing will ensure that the paint retains its original high gloss for a long time.

Another way of washing the paint is to use a wash-and-wax solution. This is easier than waxing in the normal way. Just wash the vehicle first, then put the wash-and-wax solution in a bucket of water and apply it to

the paintwork. All that remains is to wipe the paint until it is dry. This type of wax will only protect the paint adequately if it is used every time the vehicle is washed and the interval between washes is not more than two or three weeks.

Polishing should only be done when the paint has lost its gloss due to weathering or lack of proper care and the gloss can no longer be restored by wiping in the normal way. After treatment with polish, wax the paint thoroughly to retain the gloss which has been obtained.

**Minor paint damages.** Such as scratches, stone chips and the like, can easily be rubbed up with a paint stick available at your Authorized VW Dealer.

In the spare tire compartment you will find a sticker showing a number. This is the code number for the paint color of the vehicle.

**Tar spots** tend to penetrate in to the paint in a very short time. They should be removed as soon as possible, preferably with a tar remover. Afterward, the area concerned should be washed with a solution of shampoo and water and rinsed well to remove all traces of tar remover.

Insects tend to stick on the front of the vehicle and on the windshield in the summertime. These should also be washed off the paint as soon as possible. When really dried on the insects can be removed with an insect remover. The paintwork should also be washed, rinsed and coated oil afterward.

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**Parking under trees.** Vehicles which are parked under certain trees in the summer are often found to be covered with sticky spots. These spots can be taken off easily with a shampoo if the treatment is not delayed too long. It is advisable to wax the paint afterward.

To get clogged with tar splashes, or similar insects. New blades should be fitted as often as necessary.

**The Convertible top** does not require any special care. It is important however to clean the plastic material regularly. When very dirty the top can be cleaned with a soap powder solution or one of the normal plastic cleaners. A hard brush will help to remove dirt from the painted surface of the material but care must be taken at the edges to avoid scratching the paint with the bristles. After washing the top, the complete vehicle must be rinsed thoroughly with clear water.

Spots in the top material must never be removed with paint thinners, chlorine based spot removers or similar solutions as this will damage the material. Stubborn spots can be removed by wiping with a cloth moistened with benzine and then rinsing well with a lukewarm soap solution.

The pivot points of the top linkage should be cleaned occasionally and a few drops of oil applied. Afterward the joints should be wiped dry to ensure that oil does not drip on to the top material.

Noises caused by friction between the window frames of the Convertible and the rubber weatherstrips can be eliminated by rubbing in some talcum powder or silicone spray.

**The front seats.** If the front seats get hard to slide, the runners should be lubed with dry stick lubricant at top and bottom after being cleaned with a cloth. The seats can be removed to do this by pushing them forward out of the frame.

**Door and window weatherstrips** must be undamaged and supple to ensure that they return to their original flexibility. If the rubber is stiff coat the weatherstrips with silicon powder or silicone spray occasionally.

The windows can be cleaned with a sponge and clear water. Always use a special clean cloth to dry the windows. This cloth should not be used on the paintwork in any circumstances as most paint cleaners and polishes contain ingredients which will cause unpleasant streaks to appear on the windshield when it rains, even if only the smallest trace is present. These streaks can only be removed with a good windshield cleaner. Do not forget to clean the wiper blades.

**The windshield wiper blades** should be taken off from time to time and cleaned with a hard brush and alcohol or a strong detergent solution. During long dry periods they tend

## Car care materials for the Volkswagen

The items listed below will help you preserve the built-in beauty of your Volkswagen. Compounded especially for use on your VW they are available at your local Authorized Volkswagen Dealer. Detailed instructions on how to use the various products are imprinted on the individual containers.

| Application   | Volkswagen Product                                   |
|---|--|
| Car Washing; Convertible Top Cleaning; Upholstery Cleaning; Whitewall Tire Cleaning | All Purpose Cleaner - ZVW 242101                     |
| Paint Polishing and Paint Waxing  | Combination Car Cleaner and Wax - ZVW 241109         |
| Paint Polishing   | Paint Polish - 000098001                             |
| Paint Waxing  | Paint Preservative - 000098011                       |
| Care and Cleaning of Chrome Parts   | Chrome Cleaner and Protection - 00009606             |
| Windshield Cleaning   | Windshield Washer Anti-Freeze & Solvent - ZVW 241101 |
| Paint Touch up  | Touch up Paint - all colors                          |

**The cloth upholstery** should be cleaned with a vacuum cleaner or a fairly hard brush. Spots can usually be removed with a lukewarm soap solution. Grease and oil spots can be treated with spot remover. Do not pour the liquid on to the material as this will cause marks. Dampen a clean plain cloth with the cleaner and remove the spot by rubbing with a circular movement and working inwards.

**The leatherette parts** of the headlining, side trim panels and seats can be cleaned best with a soft cloth. Again very firmly use a lukewarm soap solution or a dry foam cleaner. Use only a dry foam cleaner on upholstered parts of the seats and backrests because the material used in these parts is air-permeable and liquid cleaners would penetrate into the textile backing.

Grease or paint spots should be wiped off before they dry when possible. Once dry they can be removed by rubbing carefully with a cloth moistened with benzine or alcohol. Since preservatives in the compound will irritate the skin do not touch the treated surface. Do not apply any oil to the leatherette. It should not work on too long. After cleaning, rub the material dry with a soft cloth. So-called preservatives are not suitable for leatherette because they do not soak into the material and merely collect dust and make clothing dirty.

**Air in the body.** If the window is left in the garage for long periods, the garage and car doors must be opened from time to time to prevent the formation of mold and damp stains inside the vehicle.

## Tires

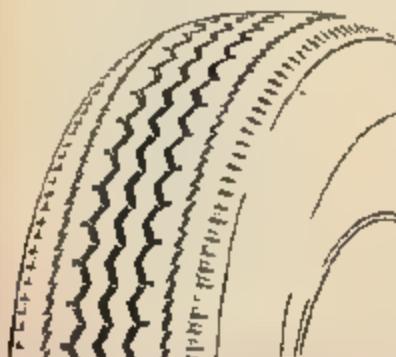
In addition to checking pressure regularly and driving carefully, the following points should be remembered in connection with tires:

- 1 - Check tires for damage occasionally and remove embedded material.
- 2 - Keep oil and gasoline away from the tires.
- 3 - Try not to expose tires to sunshine for long periods.
- 4 - Replace missing valve dust caps as soon as possible.

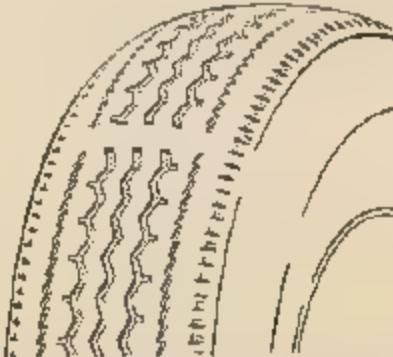
The original equipment tires on your Volkswagen incorporate built-in tread wear indicators to assist you in determining when your tires have been worn to the point of needing replacement. These indicators are molded into the bottom of the tread grooves and will appear as approximately  $\frac{1}{16}$  inch wide bands when the tire tread depth becomes  $\frac{1}{16}$  of an inch. When the indicators appear in two or more adjacent grooves, tire replacement due to tread wear is recommended.

We advise you however not to let the tires wear down to this point as tires with treads in this condition cannot grip the road surface properly when driving at high speeds on wet roads. If you notice that the tires are wearing unevenly, get advice from your Authorized VW Dealer.

Tread still good



Tread worn out



## Just in case . . .

If you have to carry out a repair yourself we have included some information on the next few pages which should help you.

All other repairs should always be performed by an Authorized VW Dealer. The Volkswagen Service Organization offers you a widespread network of authorized dealers staffed by skilled mechanics and equipped with all the special tools and appliances required. Whenever you see the familiar VW sign on the roadside, you can be sure of expert advice and quick sufficient assistance.

### Wheel changing

Before taking out the spare wheel disconnect the hose leading to the valve of the spare wheel.

Apply the hand brake and block the opposite wheel.

Take off hub cap with a screwdriver and jack up the vehicle so that the wheel is clear of the ground. Then unscrew the locking nut from the wheel and with the jack raise the vehicle.

Loosen all wheel bolts about one turn with socket wrench and key.



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Insert jack into square hole under body and push the jack tube down until it touches the ground.

Place bar in upper link A of jack and raise vehicle by pumping handle up and down.

Unscrew wheel bolts and take wheel off.

Place spare wheel in position and raise or lower vehicle as necessary until a hole in the

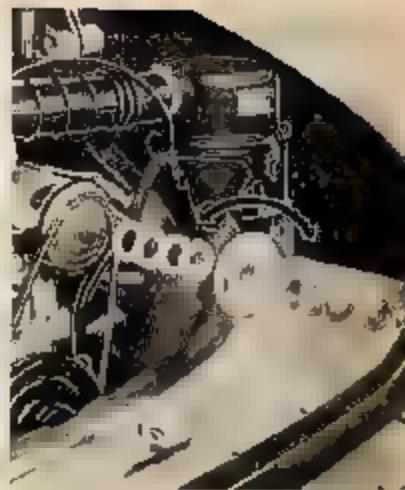
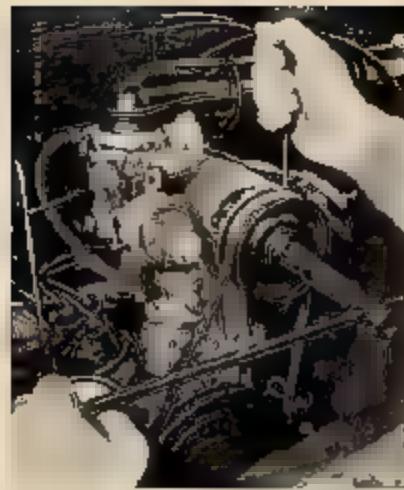
wheel is roughly lined up with a threaded hole used by old and retain it until the wheel can be swung down to align the other holes used retaining bolts.

Tighten bolts until the wheel, centered by the spherical shape of the bolt heads, contacts body all round.

Place bar in lower link B of jack and lower the vehicle by pumping handle up and down.

Insert bar into wrench and tighten the wheel bolts diagonally to 170 lb. lbs. Have it checked at a service station with a torque wrench because correct tightness of the wheel bolts is important for safety.

Place iron cap on wheel and install hub cap and a tire of the size. Recheck tire pressure in the tire you have just put on. See correct tire pressure last page 60.



### Adjusting or replacing V belt

The belt tension is correct when the link can be pressed inward about 6 in at the center. The belt must not be too tight or too

tight. A new belt may stretch slightly at first so it should be checked after about 600 miles and the tension corrected if necessary.

To adjust the belt, remove the rear part of the pulley on the generator. When loosening and tightening the nut, place a screwdriver in the slot in the front half of pulley and support the screwdriver against the upper screw in the generator housing. To fit a new belt, the cover plate for the crankshaft pulley must also be removed after unscrewing the three screws.

The belt tension is adjusted by varying the number of washers between the pulley halves. Taking washers out increases the tension, putting them in decreases it.

#### Hints

Although the life expectancy of the V-belts of your VW is very high, you should always carry a replacement belt in the car.

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### Cleaning fuel pump filter

Remove plug and take filter out.

Reinstall plug immediately to prevent fuel leakage.

Wash filter in clear benzine and blow it dry.

When installing the filter, ensure that the washer for the plug is located properly.

### Removing and installing spark plugs

Pull connector off.

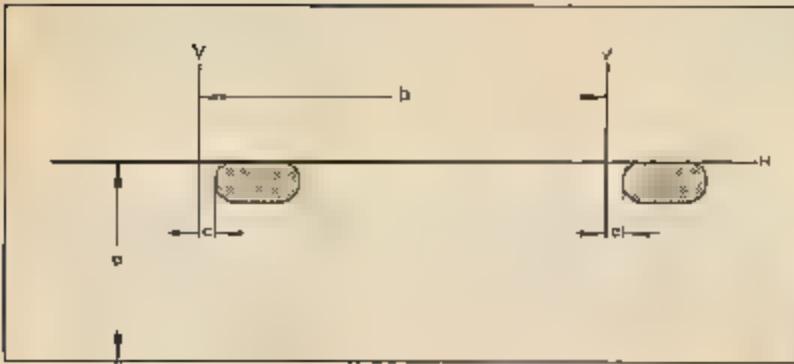
Screw plug out with socket wrench and bar.

Dirty plugs should be cleaned with a sand blaster but in an emergency, the carbon can be removed with a chip of wood. Do not use a wire brush. The plugs should also be clean and dry on the outside as well in order to avoid shorting and tracking. The gap can be set by bending the outside electrode. The gap should normally be .028 in., but when the weather is very cold it can be reduced to .020 in. Temporarily to facilitate starting.

Take care not to cross-thread the plugs when inserting them, and tighten them firmly, but not overnight.

New plugs should be fitted every 12,000 miles.





### Headlight adjustment

It is best to check the headlight alignment with a regulation screen or aiming device if one is available. Proceed as follows:

Adjust seat to correct position and park vehicle on level surface squarely facing a wall or screen 25 feet in front of the headlights. The driver's seat must be loaded with one person or a weight of 54 lbs.

Measure height ( $d$ ) of center of headlights from ground and draw a horizontal line ( $H$ ) on screen at this height the full width of the vehicle.

Opposite the center of each headlight draw vertical lines ( $V$ ) intersecting the horizontal. These lines should be 48.5 in apart. Drawing

a vertical line for the center of the vehicle's light, tip aligning vehicle with screen.

Loosen the screw in the center below the headlight and take the trim ring off.

Aim the headlights individually by turning the two aiming screws with low beams switched on. Cover up the second headlight.

The headlights are correctly aimed when the top edge of the high intensity zone is on the horizontal line  $H$  and the left edge is 2 in. to the right of the vertical line  $V$ .

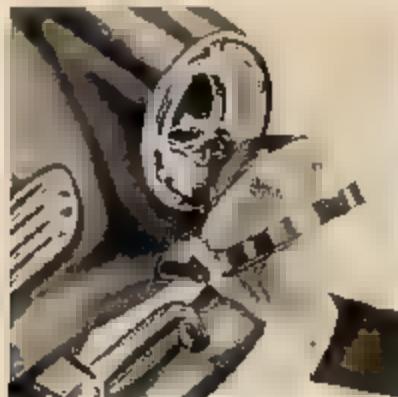
Check with your State Bureau of Motor Vehicles for variations from this dimension.

B - Height of headlamp center from floor  
 = 364 mm P (Driver) / 374 mm P (Passenger)  
 = 7 in.

A - lateral aim      B - Vertical aim



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### Bulb replacement

#### Sealed Beam unit

Loosen screw in the center below the headlight and take the trim ring off.

Remove three screws in Sealed Beam retaining ring and take ring off.

Take Sealed Beam unit off of support ring and pull cable connector off.

When installing new Sealed Beam unit, ensure that the heat glass does engage properly in the support ring.

Check headlight settings.

#### Front turn signal and parking light bulb

Loosen two Phillips screws and take lens off. Press bulb into holder slightly, turn and take out. Install new bulb.

With lens fitting lens ensure that gasket is located properly.



#### Rear turn signal, stop and tail light bulbs

Unscrew the two Phillips-head screws and remove the lens.

- Bulb positions:
- Top = turn signal
- Center = stop
- Bottom = tail

Press bulb lightly into holder turn and clockwise.

Install new bulb.

When fitting lens: ensure that gasket is located correctly. Tighten lens securing screws evenly but do not overtighten.



#### Licence plate light bulb

Open rear hood.

Remove screws on each side of lens and take off lens.

Press bulb lightly into holder, turn and take out, install new bulb.

When installing ensure that the gasket fits properly.



#### Back-up light bulb

Unscrew the two hex securing screws until the rim and lens can be taken off.

Take reflector out of housing.

Press bulb lightly into reflector, turn and take off, install new bulb.

When fitting rim, ensure that rubber seal is seated properly.

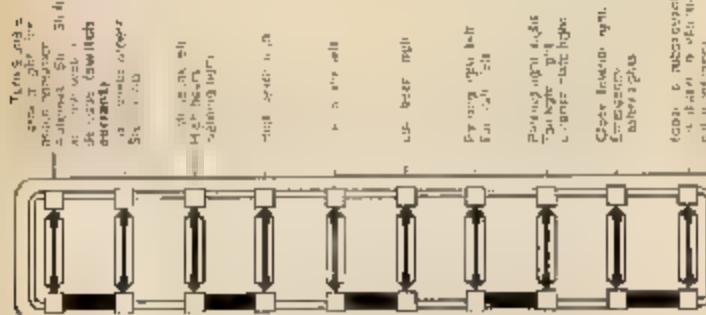
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#### Bulb Chart

|  |  |
|--|--|
| Headlight  |  |
| Front light - Turn Signal  |  |
| Tail Light   |  |
| Stop Light   |  |
| Rear Turn Signal   |  |
| Licence Plate Light  |  |
| Back-up Light  |  |
| Interior Light   |  |
| Speedometer clock and gauge warning lights   |  |
| Warning lights of emergency heavier brake operation, rear window defroster and Automatic Stick Shift |  |

| J.S. Replacement Bulb | VM Part Number |
|-----------------------|----------------|
| 5012                  | 111 941 261 A  |
| 1034                  | N 177 282      |
| 67                    | N 177 182      |
| 1073                  | N 177 222      |
| 1072                  | N 177 222      |
| 67                    | N 177 182      |
| 1073                  | N 177 232      |
| 67                    | N 177 222      |
| 1073                  | N 177 232      |
| —                     | N 177 512      |

#### Fuse box



Three additional 8 amp fuses in separate fuse holders are located in the engine compartment. The one above the generator protects the back-up lights.

An additional fuse above the generator coil is at the front valve of the distributor. Check that this fuse should ever burn out, the ignition cannot be started.

Another fuse near the voltage unit fuses is for the main current of the rear window defroster.

#### Replacing fuses

The fuse box is located under the instrument panel near the steering column. The transparent lid on the fuse box has symbols embossed on it showing the various circuits.

When a fuse blows, it is not sufficient to merely replace it with a new one. The cause of the short circuit or overload must be established. On no account should fuses be replaced up with tin foil or wire as this can cause serious damage elsewhere in the electrical system. It is advisable to always carry a few spare 8 ampere fuses in the vehicle.



### **Checking battery**

The ability of the engine to start readily depends to a great extent on the condition of the battery. For this reason, the battery should be checked regularly and given a certain amount of attention. The battery is secured in the floor plate of the engine compartment with two brackets. To check the electrolyte level, remove the plugs. The electrolyte level should always be in accordance with the mark - if the level is too low, it must be topped up with distilled water.

#### **Attention**

When working on the battery, take care not to short circuit the terminals. This would cause the battery to heat up very quickly which could lead to damage.

The electrolyte level drops when the battery is charged due to the dissociation of the water used to dilute the acid and to a lesser extent, to evaporation. How often the battery has to be topped up depends mainly on operating conditions and indirectly on the time of year. When a vehicle is often driven long distances in the daytime with hardly any current being used, the battery will have to be topped up with distilled water much more often than in the case of a vehicle which is operating under different conditions. As a general rule, the battery electrolyte level must be checked more often in the summer than in the winter. VW drivers for contractors who do a lot of driving are advised to check the battery at least every week.

Do not put in more water than is necessary because if the level is too high, the electrolyte will overflow when the battery is being charged and cause damage.

The terminals and connections should be kept clean and greased with battery terminal grease. Ensure that the ground connection to the body is free of corrosion and tight.

If you store your vehicle for a prolonged period, it is advisable to take the battery to an Authorized Volkswagen Dealer. A battery which is not in constant use will discharge itself in time and this can cause permanent damage to the plates if the battery is not checked about every four weeks and charged as necessary.



### **Towing**

At the front, the rope should be attached to the lower axle tube as near to the frame head as possible.

The driver of the vehicle that is being pulled must take care to keep the tow rope taut.

On page 22 you will find hints to observe when towing with the VW Automatic Stick Shift.



## Here is what to do when trouble troubles you

Your Volkswagen should repay you with trouble free driving if it receives regular maintenance.

Should you ever encounter difficulty in starting your engine or have trouble on the road, there are a few simple repairs which you can make to get you VW going again. Locate the problem and probable cause of your trouble in the Guide or the following pages and follow the directions on what to do.

If the trouble is serious or you are uncertain as to its origin, be sure to see an Authorized VW Dealer as soon as possible.

**Note:** The adjustment of idling, ignition timing and on vehicles with four speed synchromesh transmission — throttle positioner requires special equipment and training. We suggest that you consult your authorized VW Dealer.

| Problem  | Probable Cause  | What To Do   |
|--|---|--|
| VW will not start<br>engine will not run over<br>or limp; can't stop | <ul style="list-style-type: none"> <li>1. Run down or dead battery</li> <li>↓ <b>Causes:</b> <ul style="list-style-type: none"> <li>A. Accidental</li> <li>B. No start</li> <li>C. No connection behind dash cover</li> <li>D. Starter defective</li> <li>E. Vehicle will not move (check shift). The gear shift lever is held in Neutral.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>1. A. Faulty speed synchromesh transmission: Push to start the vehicle (start-on ignition, neutral third gear) at a speed of approximately 20 mph. Release clutch slowly. Power battery charged and cause of high current consumption checked.</li> <li>B. Automatic Shift Solenoid: Push to start the vehicle, turn on ignition, shift into driving gear when leaving at cruising, the engine should idle at a maximum speed of 25 mph. Have battery charged and cause of high current consumption checked.</li> <li>2. Make sure that all connections are tight:       <ul style="list-style-type: none"> <li>A. With little cable tension, turn on battery and ground and oil ground strap.</li> <li>B. Ignition wires are cleaned, mounted on starter multi plug. See no vehicle part except the cluster has broken dash board.</li> </ul> </li> <li>3. Have vehicle started by pushing from paragraph 3 and take it to nearest Authorized VW Dealer.</li> <li>4. Shift to Neutral.</li> </ul>  |
| VW will not start<br>engine runs over                                | <ul style="list-style-type: none"> <li>5. Loose connection in ignition system</li> <li>6. Loose connection in primary shield to cap</li> <li>↓ <b>Causes:</b> <ul style="list-style-type: none"> <li>I. Spark is short circuitable, visible in the ignition system</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>5. Check for loose connections at coil, distributor and spark plug.</li> <li>6. Turn on ignition, remove ignition coil cap, hold it by insulation and shake wires away from other ignition coils. Hold it by insulation and shake wires away from other ignition coils. Hold it by insulation and shake wires away from other ignition coils. If this is not the case, take to nearest Authorized VW Dealer.</li> <li>A. Turn on ignition, remove distributor cap and turn engine by the flywheel until the ignition leads are aligned. Open and close ignition switch several times with a nonmetal object. A visible and audible spark will appear between the wires. If this is not the case, take to nearest Authorized VW Dealer.</li> <li>B. If spark appears at points, remove high tension wire from center of distributor cap and hold it against a metal part of the engine at a distance of approximately 1/2 inch. If there is no visible spark, take to nearest Authorized VW Dealer.</li> <li>C. If spark appears at points, remove high tension wire from center of distributor cap and hold it against a metal part of the engine at a distance of approximately 1/2 inch. If there is no visible spark, take to nearest Authorized VW Dealer.</li> </ul> |

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| Problem   | Probable Cause   | What To Do  |
|---|--|---|
| VW will not start<br>engine turns over  | <ul style="list-style-type: none"> <li>7. Spark is off cycle at idle. Trouble is most likely in fuel system</li> <li>A. Caused by improper starting procedure. If the gas pedal is depressed too far, the accelerator pump in the carburetor injects too much gasoline</li> <li>B. Carburetor may be flooded. Gas or gasoline vapor may be in the air cleaner</li> </ul> | <ul style="list-style-type: none"> <li>C. If a spark appears at high tension cables, an intermediate cap should be cleaned (little oil and gasoline). Remove high tension cable from one spark plug. If plug is clean and dry, reassemble original carburetor-to-distributor and turn on ignition switch. Hold cable with dry piece of cloth to avoid shock. A small white metal pellet is spark plug electrode. When the engine is turned over, it hot, there are dry ignition cables and spark plug connectors removed. One ignition cable is tight in distributor cap and still disconnected. See your Authorized VW Dealer if the starting motor did not receive enough ignition gasoline via plug electrodes because of insufficient fuel supply.</li> <li>D. Oil, air and spark plugs should be cleaned and see, special new plug is necessary. Carburetor gasoline via plug electrodes because of insufficient fuel supply.</li> </ul> |
| Engine starts shortly<br>after starting   | <ul style="list-style-type: none"> <li>8. Fuel leak outside</li> <li>Automatic choke does not shut off<br/>accident fuel supply</li> </ul>   | <ul style="list-style-type: none"> <li>E. See paragraph 3 through 8</li> <li>F. Check vehicle outside when it is normal operating after ignition has been switched on for 7-10 minutes (depending on ambient temperature). Close the choke until just off. If cold, repeat 3 through 8 a closer interval open at first idle once and if necessary close until warm. See your Authorized VW Dealer.</li> </ul>   |
| Engine stalls while<br>driving in traffic   | <ul style="list-style-type: none"> <li>9. Oxygen - ignition system</li> <li>10. Fuel supply is exhausted</li> <li>11. Fuel filter mesh may be clogged</li> <li>12. Gasoline may be contaminated by water dust or oil</li> </ul>  | <ul style="list-style-type: none"> <li>G. See paragraph 5 through 7</li> <li>H. Check whether any gasoline is left in tank</li> <li>I. After removing the intake plug, the fuel filter can be taken off for cleaning</li> <li>J. See your VW dealer for cleaning of all components of the fuel system</li> </ul>  |
| Warning light on<br>instrument panel or<br>warning lamps                            | <ul style="list-style-type: none"> <li>K. Light goes on the instrument panel</li> <li>L. Light goes off but they do not go out when doors are closed</li> </ul>  | <ul style="list-style-type: none"> <li>M. Stop in order and turn off the key. Add oil to engine. If the oil level is sufficient and light goes on during driving, contact the nearest Authorized VW Dealer without delay.</li> <li>N. If light does not go off without turning off, switch off all unnecessary electrical equipment (radio, lights, etc.). Turn off heater and radio no otherwise the battery will soon go run down. Turn off heater and radio before turning on, because engine cooling fan is no longer working.</li> </ul>   |
| Front warning light not<br>extinguished (ignition<br>switch off, the engine<br>off) |  |   |
| Vehicles with Automatic<br>Shift, 5HP, Low, Central<br>gasoline                     | 17. Control valve fuse burned out  | Q. Replace fuse (see page 30). Connect cable connections on control valve located on the left in the engine compartment.  |

## Proper lubrication . . .

means regular and careful lubrication. Page 56 shows you at which intervals the various points require attention.

### Engine

Regular oil changes are necessary even if the very best brand of oil is used because dirty oil in the engine means increased wear and reduces service life.

The oil is drained, when warm, by removing the plug in the oil strainer cover plate. Flushing is not necessary but the strainer must be removed and cleaned at every oil change. The gaskets and the copper washers under the cap nuts must always be renewed. The engine is then filled with 6.3 US pints of oil (4.4 Imp pints) labeled "For Service MS".

Due to the detergent properties, the fresh oil will look very dark after the vehicle has been running for only a short time. This need not worry you and under normal operating conditions there is no reason whatever to change the oil at shorter intervals than every 1000 miles. We only recommend more frequent oil changes - every 1500 miles - in the winter if you drive mostly short distances and in city traffic. If you only drive a few hundred miles a month under these conditions, it is advisable to have the oil changed every 8 to 8 weeks. In countries with arctic climates where average temperatures are about -13° F the oil should be changed every 750 miles.



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### Some more information about oil

Always use a name brand oil labeled "For Service MS" for the engine of your Volkswagen. The quality of oil produced by reputable firms is so good that the choice of brand is entirely up to you. The Volkswagen engine makes no special demands with respect to oil quality which cannot be met by the well-known and popular brands. It is suggested that you select "your" brand of oil at the first oil change at 600 miles and that you stick to this brand if at all possible.

The classification of oil into various viscosity grades is shown by the designations SAE 30, SAE 20 W / 20 and so on. The viscosity of a lubricant indicates its resistance to flow at a given temperature. The VW engine only requires two different viscosity grades which are used, according to season of year as follows:

SAE 30      In warm seasons and all year round in cold, too with hot climates

SAE 20 W / 20      In winter mode

or

SAE 10 W / 30      In areas where the average temperature is below -13° F

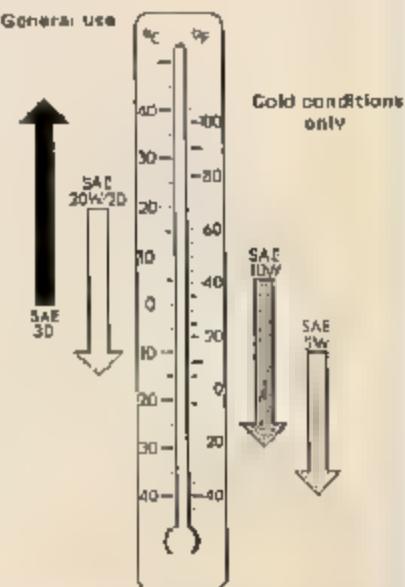
SAE 5 W / 30      In countries with arctic climates and temperatures below -37° F

\* Avoid driving at high speeds for long periods if using SAE 10 W oil and the outside temperature is above 37° F still using SAE 5 W oil when the temperature is about 5° F.

All SAE grades cover a temperature range of about 60° F and the ranges of two neighboring grades overlap by at least 30° F. Brief variations in temperature between seasons can therefore be disregarded. For the same reason, it is also all right to mix oils of different viscosities when oil has to be added between oil changes and the viscosity of the oil in the engine no longer corresponds to the actual temperature.

### Temperature ranges of SAE grades

#### General use

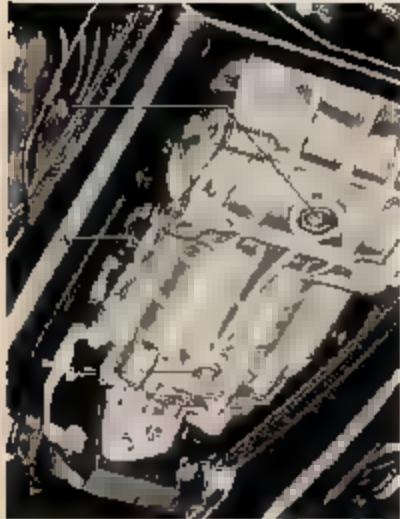


No additives of any sort should be mixed with oils classified "For Service MS".

## Transmission

Transmission and final drive are combined in one housing and both lubricated with the same hypoid oil. The oil should be up to the edge of the filler hole (A).

As oil changes every 30 000 miles, the old oil should be drained when warm. The magnetic oil drain plug (two on the four speed synchronoshaft transmission (both B) and one only on Automatic Stick Shift (C)) must be cleaned carefully. On vehicles wth Automatic Stick



Shift; additionally the transmission oil pan has to be removed and the oil pan gasket must be replaced.

Fill up 5.3 - 5 pints on fourspeed synchromesh transmission and 6.3 - 5 pints on Automatic Stick Shift of quality SAE 90 hypoid oil. Only in cold climates with arctic climates is it necessary to use the thinner SAE 80 transmission oil.

The oil sometimes runs into the transmission liquing very slowly. If one attempts to put the oil in too quickly, it may overflow and give the impression that the housing is already full although actually only about 2-3 pints have been put in. It is essential to the service life and silent running of the transmission that the correct amount of oil is used.

The oil level in the transmission should be checked every 6000 miles. At the same time the transmission should be checked for leaks and irregularities with Automatic Stick. If additionally the mounting bolts D of the transmission oil pan have to be tightened up again.

Additives should not be used with hypoid oil.

On vehicles wth Automatic Stick Shift the ATF in the engine compartment does not have to be changed, but the level should be checked every 6000 miles with engine switch off. An ATF test stick (E) with a dipstick attached is also provided for this purpose on the right side in the engine compartment. The liquid level should be between the two marks on the dipstick and should never let follow the lower

mark. If necessary, fill up with ATF and check for leaks.

It is imperative that only those ATF's be used which show on the container the following designations:

Brown band

2 - Q1-XR 1 N 4W

3 - 1 digit number preceded by the letter "B"

**Note:** Additives must not be used with ATF.

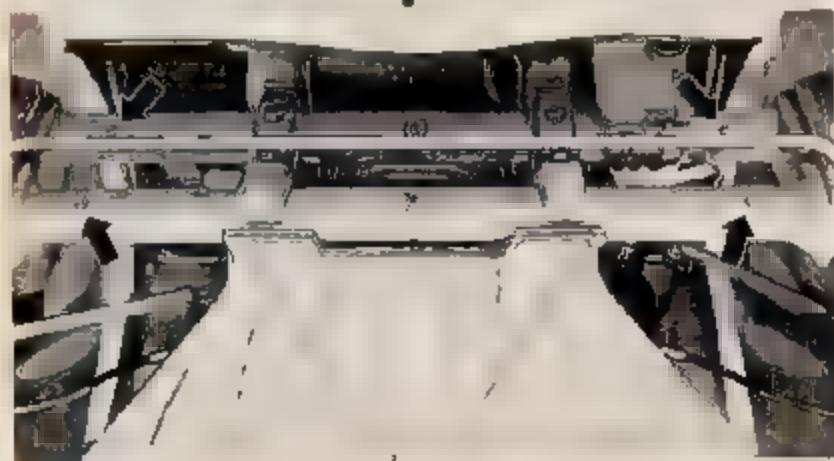


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## Front axle

The front axle can only be lubricated properly when the axle is free of load, that is with the front end lifted.

There are four nipples on the axle tubes which must be lubricated with a lithium-based multi-purpose grease. The nipples and the grease gun nozzle should be cleaned carefully before greasing commences. Place gun on nipples and inject grease until fresh grease starts to come out at the torsion arm sealing flange.



Grease and oil should not be left on tires and brake hoses for long periods. Even small traces should be wiped off immediately.

If the vehicle is driven less than 6000 miles per year the front axle must be lubricated once a year.

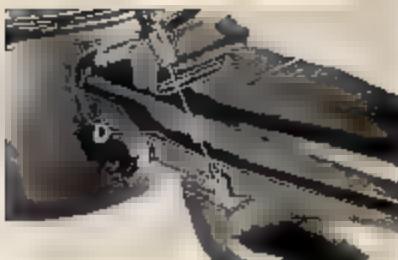
## Air cleaner

A dirty cleaner element not only reduces the engine output, it can also causeunnecessary engine wear. Traffic conditions are such that the vehicle is often driven on very dusty roads. the cleaner must be checked frequently even daily if necessary. All the dust present in the air drawn in by the engine is retained by the filter element in the upper part of the air cleaner and washed out when the vehicle is in motion by the oil in the lower part. In time, this causes a layer of sludge to form at the bottom of the lower part. When there is only  $\frac{1}{4}$ " of oil above the sludge layer, the lower part must be cleaned and filled with fresh oil. The cleaner must be removed to do this.

Loosen clip - A - on intake elbow and take elbow off.  
 Pull crankcase ventilation hose - B - on.  
 Loosen clip - C - on hose for preheated intake air and pull hose off.  
 Remove retaining clamp - D - of cable for warm air control flap and disconnect cable.  
 Unscrew screw - E - on outer cable retaining and pull cable out.  
 Release clip - F - securing cleaner to bracket and take cleaner off.  
 Loosen the three upper clips - G - , take cleaner upper part off and pull it down with the filter element downwards.

Clear bottom part carefully and put in 30 ml of fresh engine oil. SAE 30 oil should be used all the year except in countries with arctic climates where SAE 0W oil should be used all the year. The top part does not normally need cleaning. If the filter element has become so dirty due to delayed cleaning of the bottom part or oil shortage has the air flow holes on the underside almost blocked, the encrusted dirt should be scraped off with a piece of wood.

After assembling the cleaner, secure it to the bracket in the engine compartment with the two clips. Before connecting the cable for the warm air control flap, check that the flaps move freely. Then push the outer cable into the retaining hole so it will go. After fixing the screw - E - attach the end of the inner cable with the clamp - D - to the lever of the non-weighted flap. Tighten intake elbow clip carefully.



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## Doors and hoods

Above the door hinge pin is a small oil chamber which is sealed with a plastic plug. At least every third month, the amount of oil in the chamber should be checked after lifting the plug with a screwdriver. The chamber should be filled with SAE 30 engine oil. Press plug in and wipe off excess oil with a cloth.

No friction surfaces of the striker plates should be lubricated lightly as and when required.

The hood hinges should be oiled and the hood acts greased lightly.

The lock cylinder is treated with graphite as necessary. The key can be dipped in the graphite and then turned in the lock a few times.





**Approved Accessories**  
**Accessoires Agréés**  
**Accessori Approvati**  
**Accesorios Aprobados**  
**Utdrøvede Tilbehør**  
**Acessórios Aprovados**  
**Beproefde Accessoires**

**Genuine VW Parts** are the proper replacement parts for your Volkswagen. They guarantee accuracy, quality and reliability. Every part of the Volkswagen is available as a genuine VW Part and all are naturally of the same high quality as the original part on the vehicle when it leaves the factory. The genuine parts are expertly installed at any Authorized Volkswagen Dealership.

**VW EXCHANGE PARTS** are also replacement parts for your Volkswagen just like the Genuine VW Parts. They are covered by the same Warranty conditions as Genuine VW Parts and are available in every VW Dealership. But here is the difference. The price. VW Exchange Parts are less expensive than Genuine VW Parts but exactly the same in quality. The exchange parts are not new parts, but parts which have been reconditioned in the Volkswagen factory. That is why you have to hand in the old repairable part to get an exchange part.

**APPROVED VOLKSWAGEN ACCESSORIES** are not us' any old accessories. They have either been designed especially for the Volkswagen or selected from the vast range of accessories available and tested for use on the Volkswagen in the Volkswagen factory. The trademark "Approved Accessories" is your guarantee for material quality, good workmanship and reliability. Approved VW accessories are supplied by your Authorized VW Dealer who will also install them for you if necessary. You can buy many of the accessories yourself.

Genuine Volkswagen parts, new and rebuilt, and approved Volkswagen accessories are obtained by a warranty guaranteeing them to be free of defects in material and workmanship for a period of 6 months or 6000 m (as whichever comes first).

Please consult your Authorized Volkswagen Dealer on all questions concerning repairs. He will be pleased to advise you and your vehicle will be in good hands.

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## Technical data

### Engine

|   |
|---|
| Four cylinder, air stroke, horizontally opposed, w/ rear Air cooling by fan, thermostat controlled. |
| Pressure oil feed with gear-type pump. Oil cooler. Mechanical fuel pump.                            |
| Downward carburetor with automatic choke and accelerating pump.                                     |
| Oil bath air cleaner with thermostat controlled air pre-heating. Exhaust emission control system.   |
| Kerb 3.27 in. (83 mm)   |
| Stroke 2.72 in. (69 mm)   |
| Capacity 91.10 cu. in. (1491 cc)  |
| Compression ratio 7.6 : 1   |
| Maximum output SAE 53 bhp. at 4200 rpm  |
| Maximum torque SAE 78.1 lb. ft. at 2600 rpm.  |
| Valves clearance with engine cold intake and exhaust 0.04 in. (1.0 mm).                             |
| Fuel consumption <sup>1</sup> ) Four speed synchromesh transmission. Automatic Shift Shaft.         |
| U.S. - 27.6 miles per gallon U.S. - 20.1 miles per gallon   |
| Metric - 8.0 liters per 100 km Metric - 9.0 liters per 100 km                                       |
| Imp. - 33 miles per gallon Imp. - 31.4 miles per gallon   |
| Fuel rating 91 Octane (Regular)   |
| Oil consumption U.S. - 1.7-3.4 pints per 1000 miles   |
| Metric - 0.6-1.0 liter per 1000 km  |
| Imp. - 1.4-2.9 pints per 1000 miles   |

<sup>1</sup> Measured consumption plus 10% with full load at steady 60 mi maximum speed on level road.

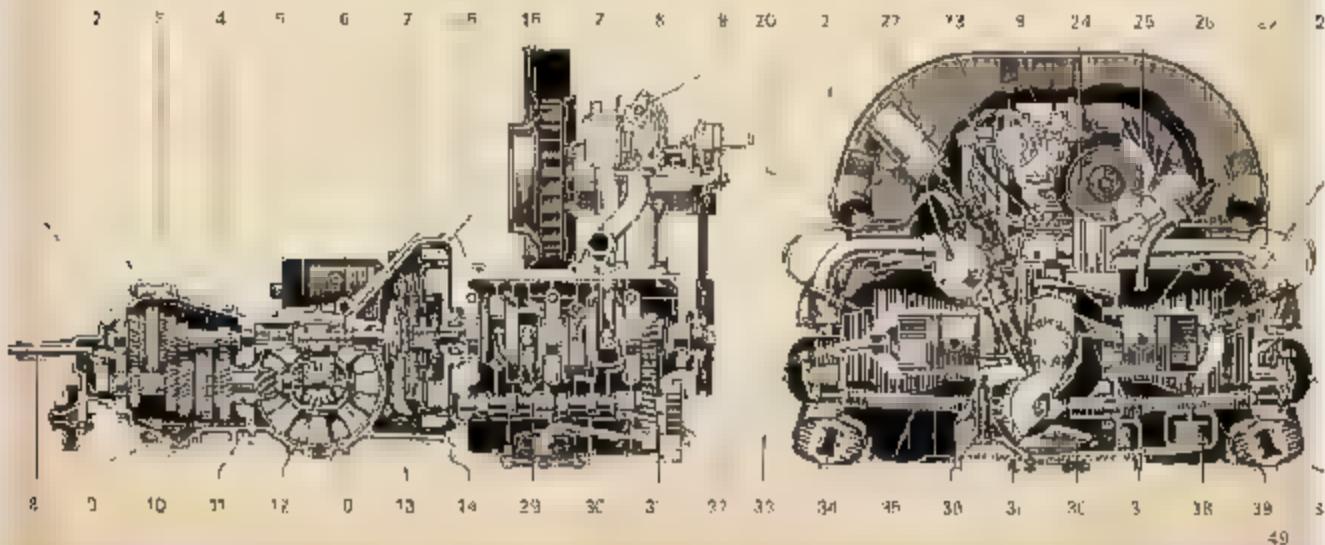
### Power transmission

a - For rigid synchromesh transmission  
 Single plate dry clutch. Clutch pedal: free play: 4-8 in. (10-20 mm).  
 Gearbox synchronized four speed gearbox and bevel gear differential in one housing.  
 Gear ratios 1st gear 3.80:1 2nd gear 2.00:1 3rd gear 1.28:1 4th gear 0.89 Reverse gear 3.51:1 Differential ratio 4.25:1 Drive shafts with two constant velocity joints per shaft.

b - Automatic Shift Shaft  
 Hydrodynamic torque converter with three speed synchromesh transmission combined with final drive in one housing.  
 Gear ratios Driving range 1: 1.00 Driving range 2: 0.89: 1 Reverse range: 3.07: 1  
 Differential ratio 4.25: 1 Drive shafts with two constant velocity joints per shaft.

### Engine with four speed synchromesh transmission

|    |                          |    |                                       |    |                           |
|----|--------------------------|----|---------------------------------------|----|---------------------------|
| 1  | 4th gear                 | 14 | Differential carrier                  | 29 | Cylinders head            |
| 2  | 3rd gear                 | 15 | Flywheel                              | 28 | Sprash oilbox             |
| 3  | 2nd gear                 | 16 | Crank-shaft                           | 29 | Crankshaft                |
| 4  | Reverse gear             | 17 | Fan                                   | 30 | Oil sump                  |
| 5  | Drive shaft, rear        | 18 | Generator                             | 31 | Camshaft drive gears      |
| 6  | Drive shaft, rear        | 19 | Concentrator with throttle positioner | 32 | Oil pump                  |
| 7  | Clutch release bearing   | 20 | Intake manifold                       | 33 | Valve                     |
| 8  | Transmission shift lever | 21 | Ignition coil                         | 34 | Shift leverage            |
| 9  | Starter                  | 22 | Carburetor                            | 35 | Push-out valve            |
| 10 | Oil tank, engine         | 23 | Oil cooler                            | 36 | Oil pressure relief valve |
| 11 | Drive belt(s)            | 24 | Fuel pump                             | 37 | Controlling rod           |
| 12 | Drive belt(s)            | 25 | Oil filter and breather               | 38 | Thermoplate               |
| 13 | Differential side gear   | 26 | Plenum                                | 39 | Windshield                |
| 14 | Differential housing     | 27 |                                       |    |                           |



### Chassis

Platform frame with tunnel shaped center member — Front axle bolted to frame head, engine/transmission unit bolted to transaxle fork — Independent wheel suspension: torsion arms at front, trailing arms and diagonal links at rear

Torsion bar springing, telescopic shock absorbers, stabilizer at front

Roller steering with maintenance free tie-rods and hydraulic steering damper

Hydraulic four-wheel dual circuit front brakes, disc brakes at front

Mechanical hand brake effective on rear wheels

Wheelbase 94.5 in. (2400 mm)

Turning circle diameter 37 ft. (11.2 m)

Track at front 51.0 in. (1300 mm)

Toe-in 0.6 to 1.8 in. (2 to 4.5 mm) unladen

Camber 30° ± 20° unloaded

Track at rear 59.3 in. (1500 mm)

Wheels 4½ x 16 safety rim wheels

#### Tires, tubeless

#### Bias Ply Tires

6.60 S 15

Load capacity 970 lbs. at 32 psi

#### Tire pressures, cold

#### front

#### rear

|                       |                                  |                                  |
|-----------------------|----------------------------------|----------------------------------|
| with 1 or 2 occupants | 26 psi (1.1 kg/cm <sup>2</sup> ) | 24 psi (1.0 kg/cm <sup>2</sup> ) |
| fully loaded          | 27 psi (1.2 kg/cm <sup>2</sup> ) | 26 psi (1.0 kg/cm <sup>2</sup> ) |

For long, high-speed trips, the tire pressures should be increased by 3 psi (0.2 kg/cm<sup>2</sup>) at front and rear

### Electrical system

Voltage 12 volts

Battery 45 Ah

Starter 0.7 hp

Generator max. 360 watts, only cut in

V belt size 9.5x900

Ignition distributor with vacuum spark advance

Firing order 1-4-3-2

Basic ignition timing TDC engine at operating temperature

|                     |                               |  |
|---------------------|-------------------------------|--|
| Contact breaker gap | .016 in. (.4 mm)              |  |
| Spark plugs         | Bosch W 145 T1<br>Benz 145/14 | } or plug with similar values from other manufacturers |
| Plug thread         | 14 mm                         |  |
| Plug gap            | .028 in. (.7 mm)              |  |

#### Dimensions and weights

|  |                     |
|--|---------------------|
| Length   | 163.0 in. (4140 mm) |
| Width  | 64.3 in. (1634 mm)  |
| Height   | 52.4 in. (1330 mm)  |
| Ground clearance                                       | .69 in. (.150 mm)   |
| Unladen weight (ready for use)                         | 1818 lbs. (820 kg)  |
| Permissible load                                       | 727 lbs. (330 kg)   |
| Gross vehicle weight                                   | 2645 lbs. (1200 kg) |
| Permissible front axle load                            | 1102 lbs. (500 kg)  |
| Permissible rear axle load                             | 1543 lbs. (700 kg)  |
| Permissible roof and trailer weights<br>(Roof weight*) | 110 lbs. (50 kg)    |
| Trailer without brakes                                 | 880 lbs. (400 kg)   |

\* Applied only to roof rack mounted to hair sections of the Coupé. Distribute load evenly.

#### Capacities

|  |   |
|--|---|
| Fuel tank                              | 10.8 U.S. gallons (40 liters; 8.8 Imp. gallons)   |
| Engine                                 | 5.9 U.S. pints (2.5 liters; 4.4 Imp. pints)   |
| Transmission and final drive           | 5.3 U.S. pints (2.6 liters)   |
| On vehicles with Automatic Stick Shift |   |
| Torque converter circuit               | approx. 2.8 U.S. pints ATF) (0.6 liters; 0.9 Imp. pints)  |
| Transmission and final drive approx.   | 0.3 U.S. pints Hybrid oil 3.0 liters 5.3 Imp. pints   |
| Brake system                           | approx. 0.3 U.S. pints (0.25 liter; 4.4 Imp. pints)   |
| Oil bath air cleaner                   | approx. 0.6 U.S. pints (0.46 liter; 7.8 Imp. pints)   |
| Windshield washer                      | approx. 3.6 U.S. pints (1.7 liter; 3 Imp. pints)<br>operating pressure 43 psi (3 kg/cm <sup>2</sup> ) |

\* Does not have to be changed.

#### Performance

|   | Four-speed synchromesh transmission:<br>82 mph (132 kph) | Automatic Stick Shift:<br>80 mph (128 kph) |
|---|--|--|
| Maximum and cruising speed                    |  |  |
| Acceleration time from<br>0-60 mph (0-96 kph) | approx. 13 seconds                                       | approx. 15 seconds                         |
| Climbing ability                              |  |  |
| 1st gear                                      | 45%  | Driving range L 38%                        |
| 2nd gear                                      | 23%  | Driving range 1 22%                        |
| 3rd gear                                      | 13%  | Driving range 2 15%                        |
| 4th gear                                      | 6%   |  |

The identification plate is found under the front hood beside the spare tire. The 9 digit number after the words "Fiat 126 T" is the chassis number. It describes the model number, model year and serial number of the vehicle as shown in this sample.

14 9 002843

Model Year Serial Number



The Chassis Number is found on the frame panel under the hood see

The Engine Number is on the generator support flange



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## Lubrication and maintenance

A. The free maintenance service at 600 miles W 1 consists of the following:

### Oil Change

- 1 - Engine: Change oil, clean oil strainer. Check for leaks.
- 2 - Transmission: Change oil, clean magnetic drain plugs; Check oil levels.
- 3 - Windshield washer: Check fluid.

### Maintenance Service

#### The following

- 1 - Check slotted nut of both rear brake drums, tighten if necessary
- 2 - Check v belt adjuster: Tighten if necessary
- 3 - Check contact points, lubricate distributor
- 4 - Check and adjust valve clearance
- 5 - Check and adjust clutch pedal free-play (four-speed synchronesh transmission only)
- 6 - Rear axle: Check torque of bolts for constant velocity joints

7 - Drive shaft: Check bolts for leaks.

8 - Check dust seals and proper fit of plug on ball-joints. Check plug seals on the rod ends. Check tie rods: Tighten if necessary.

9 - Check tire pressures. Check wheel bolts, torque to factory specifications if necessary.

10 - Check brake system for damage and leaks; check brake fluid level, add if necessary. Adjust foot and hand brakes.

11 - Check operation of electrical system and headlight adjustment.

#### The Service Advisor (Quality Control)

#### Driving readiness

Check efficiency of braking, steering, lighting and ventilation systems. Check overall performance.

#### Air road test

Adjust ignition timing with stroboscopic light. Check and adjust idling. Check啮合 gear monitor for correct functioning (four-speed synchromesh transmission only). Check cylinder head covers for leaks.

\* Lubricants and fluids are paid by the customer

B. An oil change service every 3000 miles - WS 5 - consists of

- 1 - Engine: Change oil, clean oil strainer. Check for leaks.
- 2 - Door and hood locks, door hinges: Lubricate.
- 3 - Battery: Check, add distilled water if necessary, clean and grease terminals.
- 4 - Windshield wipers: Check liquid.

C. A lubrication and maintenance service every 6000 miles - W 10 - consists of

#### Lubrication Service

Perform WS 5 plus the following items:

- 5 - Transmission: Check oil level, add if necessary. Check for leaks.
- 6 - Front end: Lubricate
- 7 - Air cleaner: Check, clean lower part if necessary and fill with fresh oil.
- In addition, on vehicles with Automatic Stick Shift
- 8 - Check ATF level, fill up if necessary. Check torque converter circuit for leaks.
- 9 - Oil pan: Check bolts, tighten if necessary.

## Maintenance Service

### The Mechanic

- 1 - Check V-belt, adjust if necessary.
- 2 - Check contact points. Replace if necessary. Lubricate distributor.
- 3 - Check and adjust valve clearance.
- 4 - Check spark plugs. Check and adjust plug gap. Check compression.
- 5 - Check control flaps on oil bath air cleaner.
- 6 - Check rubber valve for distributor ventilation. Replace if necessary. Check the fuel system for damage.
- 7 - Check and adjust clutch pedal free-play for speed synchromesh transmission only.
- 8 - Check dust seals and proper fit of plugs in ball joints. Check dust seals on tie rod ends. Check tie rods, tighten if necessary.
- 9 - Check axis play of ball joints.
- 10 - Check front wheel camber and toe-in.
- 11 - Steering gear. Check and adjust play between roller and worm.

- 2 - Check tires for wear and damage. Check tire pressures.

- 13 - Check brake system for damage and leaks. Check brake fluid level, add if necessary. Adjust foot and hand brakes. Check operation of brake warning light.

- 14 - Check thickness of brake linings and pads.

- 15 - Rear axle. Check torque of bolts to constant velocity joints.

- 16 - Drive shafts. Check boots for leaks.

- 17 - Check operation of electrical system and headlight adjustment.

- 18 - Check wiper blades and replace if necessary.

In addition, on vehicles with Automatic Stick Shift:

- 19 - Servo clutch. Check clearance on clutch servo rod and adjust if necessary.

- 20 - Control valve. Clean air filter.

- 21 - Shift lever. Check and clean contacts; replace if necessary. Adjust clearance.

### The Service Advisor (Quality Control)

#### During road test

Check efficiency of braking, steering, heating and ventilation systems. Check overall performance.

#### At or road test

Adjust ignition timing with stroboscopic light. Check and adjust idling. Check throttle position for correct functioning, four speed synchromesh transmission only. Check cylinder head covers for leaks.

**D.** In addition, every 30000 miles change the transmission oil (includes removing and resealing oil pan on vehicles with Automatic Stick Shift) - W10. Repack front wheel bearings, clean and lubricate rear wheel bearings - W51

**E** Every two years replace brake fluid. Check functioning of brake warning light switch.

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## Maintenance Record

Maintenance is only a word you enjoy many things. Proper maintenance guarantees the best economy, dependability, safety and convenience. All kinds of maintenance are available to you. Naturally we believe that the best maintenance is obtainable from Authorized Volkswagen Dealers.

- 1 - You expect your Volkswagen to be reliable and economical and to last a long time, no matter how many miles you travel, how you drive or how bad the weather and roads are. This Maintenance Record in the Owner's Manual with its reminders for regular lubrications and maintenance services will help you achieve this.
- 2 - The simple spaces will tell you when oil changes, lubrications and maintenance services are due. These maintenance services keep your Volkswagen in good running condition, contribute to your safety and help retain your vehicle's value. The indications printed in the spaces tell you at a glance when the next oil change, lubrication or maintenance service is due.
- 3 - Just hand this Owner's Manual to an Authorized Volkswagen Dealer - he will do the rest. The details are subject to alteration without notice.
- 4 - The first oil change and maintenance service at 800 miles and the oil change at 3000 miles are particularly important for a long, trouble-free service life. The rear cover of this Owner's Manual contains a punchcard for the free-of-charge maintenance service at 800 miles.
- 5 - From 6000 miles onward, the combined lubrication and maintenance service should be performed every 8000 miles. Engine oil should be changed every 3000 miles. If your Volkswagen is driven less than 2000 miles in 3 months have the oil changed every 3 months; if driven less than 6000 miles in 12 months, have the front end lubricated once a year.
- 6 - Every Authorized Volkswagen Dealer at home or abroad guarantees to perform all the operations stated for maintenance and lubrication services in accordance with Volkswagen quality standards.

### Delivery Inspection

Dealer Stamp \_\_\_\_\_

Date \_\_\_\_\_  
Miles \_\_\_\_\_

12 months

### WARRANTY VALIDATION

Dealer Stamp \_\_\_\_\_

Date \_\_\_\_\_  
Miles \_\_\_\_\_

3000 miles

### W1 & Oil change

Dealer Stamp \_\_\_\_\_

Date \_\_\_\_\_  
Miles \_\_\_\_\_

### Brake Fluid Renewal

and checking of brake warning light switch

after 2 years  
of operation

after 4 years  
of operation

after 8 years  
of operation

(Dealer Stamp)

(Dealer Stamp)

(Dealer Stamp)

### 600 miles W1

Engine and  
Transmission  
Oil change

Free Maintenance  
Service

(Dealer Stamp)

(Dealer Stamp)

Date \_\_\_\_\_  
Miles \_\_\_\_\_

Date \_\_\_\_\_  
Miles \_\_\_\_\_

Date \_\_\_\_\_  
Miles \_\_\_\_\_

|  |  |  |   |  |  |
|--|--|--|---|--|--|
| <b>6000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service  | <b>9000 miles</b><br>WS 5 Oil change                                 | <b>12000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service                               | <b>15000 miles</b><br>WS 5 Oil change                                 | <b>18000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service | <b>21000 miles</b><br>WS 5 Oil change                                |
| (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)  | (Dealer Stamp)   | (Dealer Stamp)   |
| Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____  |
| <b>24000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service | <b>27000 miles</b><br>WS 5 Oil change                                | <b>30000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service<br>Transmission<br>Oil change | <b>30000 miles</b><br>W 51 Repack front<br>and rear<br>wheel bearings | <b>33000 miles</b><br>WS 5 Oil change                                | <b>36000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service |
| (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)  | (Dealer Stamp)   | (Dealer Stamp)   |
| Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____  |
| <b>39000 miles</b><br>WS 5 Oil change                                | <b>42000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service | <b>45000 miles</b><br>WS 5 Oil change  | <b>48000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service  | <b>51000 miles</b><br>WS 5 Oil change                                | <b>54000 miles</b><br>W 10 Lubrication<br>and Maintenance<br>Service |
| (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)   | (Dealer Stamp)  | (Dealer Stamp)   | (Dealer Stamp)   |
| Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____  | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____  |

|   |   |   |  |   |   |
|---|---|---|--|---|---|
| <b>57000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp)   | <b>60000 miles</b><br>W 10 Lubrication and Maintenance Service<br>Transmission Oil change<br><br>(Dealer Stamp) | <b>60000 miles</b><br>W 51 Repack front and rear wheel bearings<br><br>(Dealer Stamp) | <b>63000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp)                          | <b>66000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp)  | <b>69000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp) |
| Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____   | Date _____<br>Miles _____                                   |
| <b>72000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp)                            | <b>75000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp)   | <b>78000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp)  | <b>81000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp)                          | <b>84000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp)  | <b>87000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp) |
| Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____   | Date _____<br>Miles _____                                   |
| <b>90000 miles</b><br>W 10 Lubrication and Maintenance Service<br>Transmission Oil change<br><br>(Dealer Stamp) | <b>90000 miles</b><br>W 51 Repack front and rear wheel bearings<br><br>(Dealer Stamp)                           | <b>93000 miles</b><br>WS 5 Oil change<br><br>(Dealer Stamp)                           | <b>96000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp) | <b>100000 miles</b><br>W 10 Lubrication and Maintenance Service<br><br>(Dealer Stamp) |   |
| Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____   | Date _____<br>Miles _____  | Date _____<br>Miles _____   |   |

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The "National Traffic & Motor Vehicle Safety Act of 1968" requires manufacturers to be in a position to contact vehicle owners if a correction of a product defect becomes necessary.

Please fill in the attached postcard if you change your address or purchase a Used Volkswagen.

You need not use this card if you purchased your car through an Authorized Volkswagen Dealer.

Please quote the VW chassis number as it appears on the identification plate of the vehicle. Its location is shown on page 53. Do not use the abbreviated serial number as shown on the vehicle registration.

Additional cards can be obtained from any Authorized Volkswagen Dealer.

#### NOTICE OF ADDRESS CHANGE

#### NOTICE OF USED CAR PURCHASE

Please check one of the above boxes

|                   |           |            |         |
|-------------------|-----------|------------|---------|
| VW Chassis Number | Last Name | First Name | Initial |
| Number            | Street    |            |         |
| City              |           | Zip Code   |         |

Please print and give complete information

## Delivery Inspection

CHECKLIST FORM  
Chassis number:

**BEFORE ROADTEST**

**Engine**

- Oil level
- Water temperature
- Steering

**Chassis**

- Centre pin for folded rear seat folded
- drum
- wheels
- wheel bolts

**Tires**

- Brake fluid reservoir

**Brake fluid and hoses**

**Steering column**

**Engine and transmission**

**Brake fluid and hoses**

**Clutch**

**Clutch pedal free-play (gear selected)**

**Transmission**

**Gear shifting**

**Chassis**

- Fuel and hand tanks

**Steering position of steering wheel**

**Electrical**

**110 V seats and instrument panel**

**Heating**

**Fresh air ventilation**

**Warming lights**

**Generator**

**Oil pressure**

**Tire pressure**

**High beam**

**Parking lights**

**Brake operation**

**Emergency lights**

**Rear window defroster**

**Horn**

**Windshield wipers and washer**

**Speedometer**

**Fuel gauge**

**Clock**

**AFTER ROADTEST**

**Engines (warm)**

**Idle adjustment**

**Functioning of the radio (radio and tuner only)**

**Windscreen wipers**

**Windshield wiper switch**

**Headlight adjustment**

**Front stop lights**

**Rear lights**

**License plate light**

**Instrument light**

**Turn signals and parking lights**

**Emergency lights**

**Backup lights**

**Brake lights**

**Side lights**

**Front lights**

**Headlights**

**Lighting system**

**Operation of seat adjustment**

**Seat belts**

**Windshields and windows**

**Mirrors**

**Doors and hood locks**

**Trunk, back**

**Storage space**

**Interior**

**Chromium plated parts**

**Leatherette interior trim**

**Operation of seat adjustment**

**Vehicle in perfect condition**

(Signature of Service Advisor Date)

## Oil Change and Maintenance Service 600 miles

W 1

When the punch card "Free Maintenance Service—600 miles" found in this packet is presented to any Authorized Volkswagen Dealer, between 500 and 750 miles, the services listed on the back of this coupon will be performed without charge, except for the cost of lubricants used.

Typ 14

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